

PB-229 322

PROCEEDINGS. CONFERENCE IN THE MATTER OF
POLLUTION OF THE INTERSTATE WATERS OF THE
GRAND CALUMET RIVER, LITTLE CALUMET RIVER,
CALUMET RIVER, WOLF LAKE, LAKE MICHIGAN
AND THEIR TRIBUTARIES. INDIANA-ILLINOIS
HELD AT CHICAGO, ILL., ON 2-9 MARCH 65.
VOLUME 5

Public Health Service,
Washington, D.C.

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PB 229 322

PROCEEDINGS

VOLUME 5



Conference

In the matter of Pollution of
the Interstate Waters of the
Grand Calumet River, Little
Calumet River, Calumet River,
Wolf Lake, Lake Michigan
and their Tributaries

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MARCH 2-9, 1966

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

1 UNITED STATES DEPARTMENT
2 OF
3 HEALTH, EDUCATION, and WELFARE
4

5 *****

6 Conference in the matter of pollution of
7 the interstate waters of the Grand Calumet
8 River, Little Calumet River, Calumet River,
9 Lake Michigan, Wolf Lake and their tribu-
10 taries (Indiana-Illinois).
11

12 *****

13 MR. MURRAY STEIN, Chairman
14

15 *****

16
17 McCormick Place
18 Room 11
19 9:30 o'clock a.m.
20 March 9, 1965
21 Chicago, Illinois
22
23
24
25

1 CONFEREES:

2 MR. H. W. POSTON,

3 Department of Health, Education, and Welfare,
4 U.S. Public Health Service, Division of
5 Water Supply & Pollution Control,
6 Regional Program Director, Illinois7 MR. BLUCHER A. POOLE, Technical Secretary, and
8 MR. PERRY MILLER,9 Stream Pollution Control Board,
10 State Board of Health, Indiana.11 MR. CLARENCE W. KLASSEN, Technical Secretary, and
12 MR. RICHARD NELLE,13 State Sanitary Water Board, Department
14 of Public Health, Illinois.15 MR. FRANK W. CHESROW, President, and
16 MR. GEORGE A. LANE,17 The Metropolitan Sanitary District
18 of Greater Chicago, Illinois.
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LIST OF CONFEREES IS INCLUDED AT END OF TRANSCRIPT

1 CHAIRMAN STEIN: May we reconvene?

2 May we reconvene for what I hope will be the
3 last day of this Conference.

4 The tentative schedule is as follows:

5 We will hear from the Sanitary District first.
6 At the conclusion of that, the conferees will recess for about
7 an hour. At that time, we will reconvene the Conference and
8 hopefully have an announcement to make on conclusions and
9 recommendations.

10 You can appreciate that the time conferees
11 will have for this recess will have to be flexible, but if we
12 don't do that now, there will be an announcement later.

13 I confidently expect that we should be able to
14 keep to the schedule. Then we should be able to release you.
15 Even if we have to stay a bit late for lunch, we should be
16 through before lunch.

17 With that, we will call on Colonel Chesrow
18 for the Sanitary District.

19 Colonel Chesrow.

20 MR. FRANK W. CHESROW: Thank you, Mr. Stein.

21 My name is Frank Chesrow, President of the
22 Metropolitan Sanitary District of Greater Chicago.

23 First, I would like to take this opportunity
24 to commend our Mayor Daley, Senator Douglas, and the
25 Illinois Congressmen for their vision and determination to

1 join us in our fight to protect Lake Michigan. It is a God-
2 given resource which is ours to enjoy and not desecrate.

3 In my capacity as co-conferee appointed by the
4 Governor of the State of Illinois, it gives me great pleasure
5 to add my welcome on behalf of our Board to this Conference
6 of the representatives of the Federal Government, the
7 representatives of the State of Indiana, and my co-conferees
8 from the State of Illinois.

9 The Metropolitan Sanitary District of Greater
10 Chicago whom I have the honor to represent at this Conference
11 was one of the first Governmental agencies in the Country
12 and in the world to recognize the close and intimate relation
13 which exists between the purity of water resources and the
14 health and well-being of the community.

15 Since the representatives of the Metropolitan San-
16 itary District of Greater Chicago, from its inception in 1889,
17 have been elected by the people, they are responsive to the
18 needs of the people and concerned with the desire of the
19 population to obtain water supplies in potable form. Thus,
20 it became one of the early and principal goals of the
21 District to assure to the people living in this vast metropoli-
22 tan and surrounding area of the purity of the water supplies.
23 To the achievement of that objective, the Metropolitan
24 Sanitary District of Greater Chicago has devoted all its
25 energies, faithfully and persistently. Its efforts in that

1 respect have brought it praise and admiration from the
2 four corners of the earth.

3 In pursuance of its objectives and declared policies,
4 the Metropolitan Sanitary District of Greater Chicago has
5 endeavored to keep the streams, rivers, and water resources
6 under its jurisdiction as clean as possible. Obviously, we
7 are vitally interested in the purity and clarity of the
8 waters of Lake Michigan which is, so to speak, the life blood
9 of the people living on its shores.

10 Since the waters of the Lake are only partially
11 within the District's jurisdiction, it is clear that the
12 District cannot control the pollution which emanates from
13 sources beyond the District's jurisdiction and tend to
14 contaminate the Lake; the District, therefore, welcomes and
15 endorses all efforts of the Federal Government which are
16 aimed at the prevention and curbing of water pollution
17 originating from sources outside the control of the Metro-
18 politan Sanitary District of Greater Chicago. The District
19 will in that respect eagerly seek to cooperate with the
20 Federal Government.

21 As far as the waters and the territory under the
22 District's jurisdiction are concerned, I can say with
23 justifiable pride that the District has performed an
24 outstanding job in curbing and controlling water pollution.
25 Its efforts in that field have found world-wide acclaim and

1 have been studied and copied by people from all civilized
2 nations, as is attested to by the fact that numerous
3 delegations from this country as well as foreign lands for
4 many years have visited the District in order to acquaint
5 themselves with its methods, facilities, and operations.
6 Hence it is understandable why the accomplishments of
7 the District in the field of sewage disposal and water
8 pollution control were recognized as outstanding by the
9 American Association of Civil Engineers by naming the
10 District's operations as far back as 1955 as "One of the
11 Seven Wonders of American Engineering."

12 I shall not list here in detail the great
13 contributions of the District to the development of new
14 methods and techniques regarding sewage disposal and water
15 pollution control. It suffices in that respect to point
16 out we pioneered in 1958 the recently installed Zimmermann
17 sewage treatment plant, demonstrating again that the
18 Metropolitan Sanitary District of Greater Chicago is exploring
19 and leading in the field, and far ahead of other governmental
20 agencies performing similar tasks.

21 I would be, however, remiss in my duties were I
22 not to mention in that connection the District's Industrial
23 Waste Ordinance passed in the Summer of 1962, and I wish to
24 present a copy for the record to the conferees.

25 CHAIRMAN STEIN: This will be included in the
record without objection.

1 THE INDUSTRIAL WASTE ORDINANCE OF THE
2 METROPOLITAN SANITARY DISTRICT
3 OF GREATER CHICAGO

4 To provide for the Control of Discharge of
5 Industrial Wastes into the Sewers, Water Courses or Natural
6 Outlets within the Boundaries of The Metropolitan Sanitary
7 District of Greater Chicago, to be known as THE INDUSTRIAL
8 WASTE ORDINANCE.

9 BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE
10 METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO:

11 GENERAL PURPOSE: The general purpose of these
12 rules and regulations, prepared to be enforced by the Board
13 of Trustees of The Metropolitan Sanitary District of Greater
14 Chicago, is to provide The Metropolitan Sanitary District of
15 Greater Chicago with control over the quantity and quality
16 of industrial waste admitted to the sewage works, water
17 courses or natural outlets within the boundaries of The
18 Metropolitan Sanitary District of Greater Chicago.

19 SECTION I

20 ARTICLE I - AUTHORITY AND INTENT

21 The intent and authority for this ordinance is
22 provided in Chapter 42 Paragraphs 323 and 325 to 326-bb
23 inclusive of the Illinois Revised Statutes wherein the
24 Board of Trustees of The Metropolitan Sanitary District of
25 Greater Chicago are empowered to regulate the discharge of

1 waste matter into sewers connected with the sewers or works
2 of The Metropolitan Sanitary District of Greater Chicago
3 and prevent pollution of water supplies.

4 ARTICLE II - DEFINITIONS

5 Unless the context specifically indicates other-
6 wise, the meaning of the terms used in this ordinance shall
7 be as follows:

8 (a) The Board of Trustees shall mean the body of
9 elected Trustees charged with the administration of the
10 affairs of the Metropolitan Sanitary District of Greater
11 Chicago.

12 (b) Chief Engineer shall mean the Chief Engineer
13 of The Metropolitan Sanitary District of Greater Chicago, or
14 his authorized agent or representative.

15 (c) Combined sewer shall mean a sewer receiving
16 both surface runoff and sewage.

17 (d) Garbage shall mean solid wastes from the
18 preparation, cooking and dispensing of food, and from the
19 handling, storage or sale of meat, fish, fowl, fruit, or
20 vegetables and condemned food.

21 (e) Ground or comminuted garbage shall mean
22 wastes from the preparation, cooking and dispensing of foods
23 that has been comminuted to such a degree that all particles
24 will be carried freely in suspension under conditions normally
25 prevailing in public sewers, with no particle greater than

1 one-half inch in any dimension.

2 (f) Industrial wastes shall mean the solids,
3 liquid or gaseous wastes resulting from any industrial,
4 manufacturing, trade or business process or from the
5 development, recovery or processing of natural resources.

6 (g) Intercepting sewer shall mean any sewer built
7 or acquired by The Metropolitan Sanitary District of Greater
8 Chicago for the purpose of receiving sewage or combined
9 sewage and storm flow from one or more local sewers.

10 (h) The Metropolitan Sanitary District of Greater
11 Chicago shall mean the municipal corporation organized and
12 existing under the laws of the State of Illinois enacted
13 by the Illinois State Legislature July 1, 1889, entitled
14 "An Act to Create Sanitary Districts and to Remove Obstruct-
15 ions in the Des Plaines and Illinois Rivers", as amended,
16 and shall hereafter be referred to as the Sanitary District.

17 (i) Natural outlet shall mean any outlet into a
18 watercourse, pond, ditch, lake, or other body of surface
19 water.

20 (j) Person shall mean any individual, firm,
21 company, municipality, association, society, corporation
22 or group.

23 (k) The term "Pollution" shall be as defined in
24 Sec. 326 bb of Chap. 42 of Ill. Revised Statute and shall
25 mean the discharge or deposit in or upon such waters of

1 sewage, industrial wastes, or other wastes containing
2 soluble or insoluble solids of organic or inorganic nature
3 which may deplete the dissolved oxygen content of such waters,
4 contribute settleable solids that may form sludge deposits,
5 contain oil, grease, or floating solids which may cause
6 unsightly appearance on the surface of such waters, or
7 contain soluble materials detrimental to aquatic life, all
8 beyond the content of such like substances present in an
9 equal volume of the effluent discharged from the sewage
10 treatment works of the Sanitary District into similar
11 receiving waters.

12 (l) Sewage shall mean a combination of water
13 carried wastes from residences, business buildings, institu-
14 tions, and industrial establishments, together with such
15 ground, surface and stormwaters as may be present.

16 (m) Sewage Treatment Works shall mean the arrange-
17 ment of devices and structures for treating sewage and
18 industrial wastes.

19 (n) Sewage Works shall mean all facilities for
20 collecting, pumping, treating and disposing of sewage and
21 industrial wastes.

22 (o) Sewer shall mean a pipe or conduit for
23 carrying sewage or other waste liquids.

24 (p) Sewerage system shall mean the network of
25 sewers and appurtenances for collection, transportation, and

1 pumping of sewage and industrial wastes.

2 (q) Storm sewer shall mean a pipe or conduit
3 which carries storm, surface water and drainage but excludes
4 sewage and industrial wastes. It may, however, carry
5 cooling waters and unpolluted waters.

6 (r) The term toxic substances shall mean any
7 substance which when discharged to the sewer system in
8 sufficient quantities will interfere with any sewage treat-
9 ment process, or will constitute a hazard to human beings
10 or animals, or will inhibit aquatic life or create a hazard
11 to recreation in the receiving waters of the effluent from
12 the sewage treatment works of the Sanitary District.

13 (s) The term "Waters" shall mean all waters of
14 any river, stream, water course, pond, or lake wholly or
15 partly within the territorial boundaries of the Sanitary
16 District.

17 (t) Water-course shall mean any channel, natural
18 or artificial, whether lined or unlined, for drainage of
19 storm water, ground water or clean water.

20 ARTICLE III - ADMISSION OF INDUSTRIAL WASTES INTO
21 THE SEWAGE WORKS OF THE METROPOLITAN SANITARY DISTRICT OF
22 GREATER CHICAGO.

23 Paragraph 1.

24 On or after the effective date of this Ordinance,
25 it shall be the policy of the Sanitary District that no

1 sewerage system, which is planned or designed to discharge
2 into any of the aforesaid waters any industrial waste or
3 other wastes that will cause the pollution of such waters,
4 may be installed unless a written permit for such sewerage
5 system has been granted by the Board of Trustees, and no
6 changes, additions, or extensions to any existing sewerage
7 system shall be made in any municipal corporation having a
8 population of less than 500,000 until plans for such changes,
9 additions or extensions have been submitted to and a written
10 permit obtained from the Board of Trustees; it shall be the
11 policy of the Sanitary District to admit to its sewage
12 works those types and quantities of industrial waste that
13 are not harmful or damaging to the structures, processes or
14 operations of the sewage works and are not specifically pro-
15 hibited by this ordinance, and it shall be the policy of the
16 Sanitary District to prohibit discharge of industrial wastes,
17 which will cause pollution, directly into the waters, water
18 course or natural outlets within the boundaries of the
19 Sanitary District.

20 Paragraph 2.

21 Whenever necessary, in the opinion of the Board of
22 Trustees, the owner, operator or tenant of any industrial
23 plant or other establishment discharging or proposing to
24 discharge industrial wastes into any waters, sewer, water
25 course or natural outlet in the Sanitary District, at such

owner's, operator's, or tenant's expense, shall provide such preliminary treatment or handling facilities as may be necessary to:

(a) Reduce or modify the objectional characteristic or constituents of such industrial wastes to meet the limits or conditions provided for in Paragraph 3 hereof, and to comply with the pollution restrictions as indicated in the above definition of pollution.

(b) Control the quantities and rates of discharge of such industrial wastes over a twenty-four (24) hour day and a seven (7) day week to prevent surge discharges which may place an unreasonable burden upon the Sewage works of the Sanitary District.

Before any permit for the construction of preliminary treatment or handling facilities will be issued, plans, specifications and other pertinent data or information relating to the proposed preliminary treatment or handling facilities shall be submitted by the industry for the approval of the Board of Trustees, and no permit shall be issued and no construction of such facilities shall be commenced without the prior written approval of the Board of Trustees. No substantial alteration or addition to or in the sewer system or preliminary treatment or handling facilities shall be made without the prior written approval of the Board of Trustees.

1 Paragraph 3 - Prohibited Wastes.

2 Except as otherwise provided by the Board of
3 Trustees pursuant to the provisions hereof, no person shall
4 discharge or cause to be discharged the following described
5 wastes or waters into any sewer, water course, natural outlet
6 or waters within the Sanitary District.

7 (a) Water or wastes containing more than 100 parts
8 per million (833 pounds per million gallons) of fats, oils, or
9 greases if such water or wastes are, in the opinion of the
10 Board of Trustees, sufficient (1) to interfere with the bio-
11 logical processes of a sewage treatment plant; (2) interfere
12 with the proper operation of the sewage works; (3) cause
13 obstruction to flow in sewers; (4) cause pollution as herein
14 defined.

15 (b) Liquids, solids, or gases which by reason of
16 their nature or quantity are sufficient to cause fire or
17 explosion or be injurious in any other way to the sewage works
18 structures or to the operation of the sewage works.

19 (c) Noxious or malodorous liquids, gases or sub-
20 stances which either singly or by interaction with other
21 wastes are sufficient to create a public nuisance or hazard
22 to life or are sufficient to prevent entry into the sewers
23 for their maintenance and repair.

24 (d) Water or wastes having a pH lower than 4.5 or
25 higher than 10.0 or having corrosive properties sufficient to

1 cause damage or hazards to structures, equipment, or personnel
2 of the sewage works or of interfering with the proper oper-
3 ation of the sewerage system or sewage treatment works.

4 (e) Water or wastes containing toxic substances in
5 quantities which are sufficient to interfere with the bio-
6 logical processes of the sewage treatment works.

7 (f) Garbage that has not been ground or comminuted
8 to such a degree that all particles will be carried freely
9 in suspension under conditions normally prevailing in public
10 sewers, with no particle greater than one-half inch in any
11 dimension.

12 (g) Radio-active wastes unless they comply with
13 the Atomic Energy Commission Act of 1954 (68 Stat. 919 as
14 amended and part 20, Sub-Part D - Waste Disposal, Section
15 20.303, of the Regulations issued by the Atomic Energy
16 Commission or amendments thereto.)

17 (h) Solid or viscous wastes which cause obstruction
18 to the flow in sewers or other interference with the proper
19 operation of the sewerage system or sewage treatment works,
20 such as grease, uncomminuted garbage, animal guts or tissues,
21 paunch, manure, bone, hair, hides, fleshings, entrails,
22 feathers, sand, cinders, ashes, spent lime, stone or marble
23 dust, metal, glass, straw, shavings, grass clippings, rags,
24 spent grain, waste paper, wood, plastic, gas tar, asphalt
25 residues, residues from refining or processing of fuel or

1 lubricating oils, gasoline, naphtha, and similar substances.

2 (1) Liquids or vapors having a temperature higher
3 than 150 degrees F. at the point of entrance into a public
4 sewer.

5 Paragraph 4.

6 Wherever possible clean waters from air conditioning,
7 cooling or condensing systems or from swimming pools or clean
8 waters resulting from pretreatment of industrial wastes shall
9 be discharged to a storm sewer, combined sewer or natural
10 outlet approved by the Sanitary District.

11 Paragraph 5.

12 Any person discharging industrial wastes into a
13 sewer shall construct and maintain a suitable control manhole
14 or manholes downstream from any such place of discharge to
15 permit observation, measurement and sampling of such wastes
16 by the Sanitary District. Where no manhole has been
17 constructed or can be constructed, as in the case of some
18 existing industries, the control manhole shall be considered
19 to be the nearest downstream manhole in the public sewer to
20 the point at which the building sewer is connected.

21 Paragraph 6.

22 The Sanitary District shall have the right to enter
23 and set up, on company property, such devices necessary to
24 conduct a gauging and sampling operation after first giving
25 ten days' advance notice of its intention so to do. While

1 performing the work the Sanitary District shall observe all
2 Safety Rules applicable to the premises, established by the
3 company and the company shall be held harmless for injury
4 or death to the Sanitary District employees and the Sanitary
5 District shall indemnify the company against loss or damage
6 to its property by Sanitary District employees, and shall
7 also indemnify the company to cover liability claims and
8 demands for personal injury and property damage asserted
9 against the company which grow out of the gauging and sampling
10 operations or other work of the Sanitary District employees.

11 Paragraph 7.

12 All analyses to determine the strength and
13 character of industrial wastes shall be made in accordance
14 with the latest edition of "Standard Methods for the Examina-
15 tion of Water and Sewage" prepared and published jointly by
16 the American Public Health Association, American Water Works
17 Association, and the Water Pollution Control Federation.
18 Strength, character and quantity of wastes shall be based on
19 composite samples taken over a 24--hour or longer period from
20 the flow from all plant outlets discharging into a single
21 public sewer.

22 Paragraph 8.

23 Application for permission to connect an industrial
24 waste sewer to any sewer in the Sanitary District or to dis-
25 charge to any waters, water course or channel within the

1 Sanitary District shall be made on the standard form obtainable
2 from the Chief Engineer, The Metropolitan Sanitary District
3 of Greater Chicago, 100 East Erie Street, Chicago 11, Illinois.

4 Paragraph 9.

5 The Board of Trustees, pursuant to the aforesaid
6 statute, designates and appoints the Chief Engineer of the
7 Sanitary District or a designate of the Chief Engineer to
8 act as its representative in matters affecting the ordinance.

9 The Chief Engineer shall be empowered to recommend to the
10 Board of Trustees, standards from time to time, as the case
11 may be, and to recommend what constitutes an improper dis-
12 charge of industrial wastes or other wastes into the
13 sewers, the channel system or the treatment plants of the
14 Sanitary District.

15 ARTICLE IV - INTERPRETATION OF ORDINANCE

16 Industrial Wastes as used in the Ordinance shall
17 mean both "Industrial Wastes" and "Other Wastes." The term
18 "Other Wastes" is included in order to correspond with
19 language of the statute.

20 ARTICLE V -- ENFORCEMENT

21 Paragraph 1 - Order to Discontinue Discharge-Notice-
22 Hearing.

23 Whenever the Board of Trustees shall determine that
24 sewage or industrial wastes or other wastes are being dis-
25 charged into any of the said waters, water courses or sewers

1 of the Sanitary District, and when, in the opinion of the
2 Board of Trustees, such discharge pollutes the waters, water
3 courses or interferes with the operation of the sewerage
4 system of the Sanitary District, such Board of Trustees
5 may order whomever causes such discharge to show cause before
6 such Board why such discharge should not be discontinued. A
7 notice shall be served on the offending party directing him
8 or it to show cause before the Chief Engineer, acting for
9 the Board of Trustees, why an order should not be made
10 directing the discontinuance of such discharge. Said notice
11 shall specify the time and place where a hearing will be held
12 and notice of the hearing shall be served personally or by
13 registered mail at least ten (10) days before said hearings;
14 and in the case of a municipality or a corporation such
15 service shall be upon an officer thereof. The Chief
16 Engineer, acting for the Board of Trustees, may take evidence
17 with reference to said matter and the Board of Trustees, after
18 reviewing such evidence may issue an order by the Chief
19 Engineer to the party responsible for such discharge, direct-
20 ing that within a specified period of time thereafter such
21 discharge be discontinued unless adequate treatment works
22 shall have been installed or existing adequate treatment
23 works be properly operated or unless the sewers through which
24 such discharge is made are connected to a system of inter-
25 cepting sewers to sewage treatment works of the Sanitary

1 District as directed by the Board of Trustees. The fore-
2 going procedure shall be applicable to the provisions of
3 Paragraphs 2 and 3 of Article III hereof.

4 Paragraph 2. Revocation, modification of permit.

5 Any permit authorized and issued under the pro-
6 visions of this Act may, when necessary, in the opinion of
7 the Board of Trustees as recommended by its Chief Engineer to
8 prevent pollution of the waters, water courses or to prevent
9 interference with the operation of the sewerage system of
10 the Sanitary District, be revoked or modified by such Board
11 of Trustees on recommendation of the Chief Engineer, after
12 investigation, notice and hearing as provided in Paragraph
13 1 of this article.

14 Paragraph 3. Violation of Order to be Considered
15 Nuisance.

16 If any person, firm, association or corporation dis-
17 charges sewage or industrial wastes or other wastes into the
18 aforesaid waters, water courses or sewerage system contrary to
19 the orders of the Board of Trustees, the Board of Trustees
20 may commence action in the Circuit or Superior Court in and
21 for the County in which said Sanitary District is located or
22 in which County the Sanitary District operates facilities,
23 for the purpose of having such discharge stopped either by
24 mandamus or injunction.

25 It shall thereupon be the duty of the court to

1 specify a time, not exceeding twenty (20) days after the
2 service of the copy of the petition, in which the party
3 complained of must answer the petition, and in the meantime,
4 said party must be restrained. In case of default in answer
5 or after answer, the court shall immediately inquire into
6 the facts and circumstances of the case and enter an appro-
7 priate judgment order in respect to the matters complained of.
8 An appeal may be taken from such final judgment in the same
9 manner and with the same effect as appeals are taken from
10 judgments of the Circuit or Superior Court in other actions
11 for mandamus or injunction.

12 Paragraph 4. Penalties.

13 Whoever violates any provisions of this Act and
14 fails to comply with an order of the Board of Trustees in
15 accordance with the provisions of this act, shall be fined
16 not more than one-hundred dollars (\$100). Each day's
17 continuance of such violation and failure shall constitute
18 a separate offense. The penalties provided in this section
19 shall be recoverable by the Board of Trustees upon its
20 suit, as debts are recoverable at law.

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SECTION 2

This ordinance shall be in force from and after its passage and publication within ten (10) days in a daily newspaper of general circulation within The Metropolitan Sanitary District of Greater Chicago.

Approved:

Frank W. Chesrow

President, Board of Trustees of the Metropolitan Sanitary District of Greater Chicago.

June 28, 1962.

Attest:

Harry E. Eaton, Clerk

Approved as to form and legality:

John A. Ricker, Senior Assistant Attorney

L. J. Fenlon, Principal Assistant Attorney

George A. Lane, Attorney

Approved as to Engineering:

E. Hurwitz, Director of Laboratories

N. E. Anderson, Assistant Chief Engineer

B. A. Scheidt, Chief Engineer

Paul B. Marner, Acting General Superintendent

MR. CHESROW: Also, I have an ordinance for the control and abatement of pollution of water within the Sanitary District of Chicago, adopted by its Board of Trustees on July 11, 1946.

1 CHAIRMAN STEIN: This will be included in the record
2 without objection.

3 MR. CHESROW: Thank you.

4 ORDINANCE FOR THE CONTROL AND ABATEMENT OF POLLUTION
5 OF WATER WITHIN THE SANITARY DISTRICT OF CHICAGO, Adopted by
6 its Board of Trustees, July 11, 1946.

7 BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE
8 SANITARY DISTRICT OF CHICAGO

9 Section 1. Definitions. For the purpose of this
10 ordinance, the following definitions shall obtain:

11 District: The Sanitary District of Chicago, a muni-
12 cipal corporation, organized and existing under the laws of
13 the State of Illinois.

14 Board of Trustees: The Board of Trustees of The
15 Sanitary District of Chicago.

16 Chief Engineer: The Chief Engineer of The Sanitary
17 District of Chicago or any authorized member of his staff.

18 Waters: All waters of any river, stream, water-
19 course, pond, or lake wholly or partly within the territorial
20 boundaries of the District.

21 Sewage: All water-carried human wastes from resi-
22 dences, buildings, industrial establishments, institutions, or
23 other places in which such wastes are produced, together with
24 such ground, surface, storm, or other water as may be present.

25 Industrial Wastes: All solids, liquids, or gaseous

1 wastes, resulting from any industrial or manufacturing
2 operation or process, or from the development of any natural
3 resource.

4 Other Wastes: All decayed wood, sawdust, shavings,
5 bark, lime, refuse, ashes, garbage, offal, oil, tar, chemicals,
6 and all other substances except sewage and industrial wastes.

7 Pollution: The discharge or deposit in or upon such
8 waters of sewage, industrial wastes, or other wastes containing
9 soluble or insoluble solids, of organic or inorganic nature
10 which may deplete the dissolved oxygen content of such waters,
11 contribute settleable solids that may form sludge deposits,
12 contain oil, grease, or floating solids which may cause un-
13 sightly appearances on the surface of such waters, or contain
14 soluble materials detrimental to aquatic life, all beyond the
15 content of such like substances present in an equal volume of
16 the effluent discharged from the sewage treatment works of the
17 District.

18 Person: Any and all persons, natural, or artificial,
19 including any individuals, firm or association, and any
20 municipal or private corporation organized or existing under
21 the laws of this or any other state or country.

22 Section 2. Permit Required for Installation or
23 Change in Sewerage System. No sewerage system which is
24 planned or designed to discharge into any of the aforesaid
25 waters, sewage, industrial wastes, or other wastes which may

1 cause the pollution of such waters within the District, shall
2 be installed unless a written permit for such sewerage
3 system has been granted by the Board of Trustees. No changes,
4 additions, or extensions to any existing sewerage systems dis-
5 charging into any of the aforesaid waters, including changes
6 or additions to or extensions of the method of treating
7 or disposing of the sewage, industrial wastes, or other
8 wastes, shall be made until plans for such changes, additions,
9 or extensions shall have been submitted to and a written
10 permit obtained from the Board of Trustees.

11 Provided, however, that no permit shall be required
12 within any municipality for any connections, changes or addi-
13 tions to or extensions of existing sewerage systems that
14 receive or may receive only domestic or sanitary sewage from
15 a building housing or occupied by fifteen or less human
16 beings.

17 Section 3. Plans and Specifications to be Submitted
18 Before Permit Issued. Plans and specifications for any such
19 sewerage system shall be submitted to the Chief Engineer before
20 a written permit may be issued, and the construction of any
21 sewerage system shall be in accordance with said plans and
22 specifications. In case it shall be necessary or desirable
23 to make material changes in such plans or specifications,
24 revised plans or specifications, together with the reason for
25 the proposed changes, shall be submitted to the Chief

1 Engineer for a supplemental written permit.

2 Section 4. May Require Owner of Sewerage System
3 to Submit Plans. The Chief Engineer may require any owner of
4 a sewerage system discharging into any of the aforesaid
5 waters to file with him a complete plan of the whole or of
6 any part of such system and any other information and records
7 concerning the installation and operation of such system.

8 Section 5. Order to Discontinue Discharge-Notice-
9 Hearing. Whenever the Chief Engineer shall determine that
10 sewage or industrial wastes or other wastes are being dis-
11 charged into any of the said waters and when, in the opinion
12 of the Chief Engineer, such discharge causes pollution of
13 said water, the Chief Engineer may order whosoever causes
14 such discharge to show cause why such discharge should not
15 be discontinued. A notice shall be served by the Chief
16 Engineer on the offending person directing such person to
17 show cause before the Chief Engineer why an order should not
18 be made directing the discontinuance of such discharge.
19 Such notice shall specify the time and place where a hearing
20 will be held by the Chief Engineer, and notice of such hearing
21 shall be served personally or by registered mail at least ten
22 (10) days before said hearing; and in the case of a municipal-
23 ity or a corporation such service shall be upon an officer
24 thereof. The Chief Engineer may conduct the hearing and take
25 evidence with reference to said matter and shall thereafter

1 transmit a report of said evidence and hearing, together
2 with his recommendations, for review to the Board of Trustees.
3 After reviewing such report, the Board of Trustees may issue
4 an order to the person responsible for such discharge,
5 directing that within a specified period of time there-
6 after such discharge shall cease and discontinue unless ade-
7 quate treatment works shall have been installed or existing
8 adequate treatment works be properly operated, or unless the
9 sewers through which such discharge is made are connected to
10 a system of intercepting sewers and sewage treatment works of
11 the District.

12 Section 6. Revocation, Modification of Permit. Any
13 permit authorized and issued under this Ordinance may, when
14 necessary in the opinion of the Board of Trustees to prevent
15 pollution of such waters, be revoked or modified by the
16 Board of Trustees after investigation, notice, and hearing,
17 as provided in Section 5 of this ordinance.

18 Section 7. Violation of Order to be Considered
19 Nuisance. If any person discharges sewage or industrial
20 wastes or other wastes into the aforesaid waters contrary
21 to the orders of the Board of Trustees, the Board of Trustees
22 may commence appropriate proceedings in the Circuit or
23 Superior Courts of Cook County for the purpose of having
24 such discharge enjoined and abating the pollution of such
25 waters.

1 Section 8. Duties of Chief Engineer. The Board of
2 Trustees hereby designates the Chief Engineer as its represent-
3 ative officer to:

4 (a) receive, examine, and review plans and other
5 data relative to any sewerage systems for which written
6 permits are required;

7 (b) issue permits for the installation of sewerage
8 systems or changes, additions, or extensions in any existing
9 sewerage systems of any proposed changes in plans or spec-
10 ifications covered by permits previously issued;

11 (c) require owners of sewerage systems to
12 submit plans;

13 (d) conduct the hearing and take the evidence pro-
14 vided for in Section 5 hereof, and transmit a report of said
15 evidence and hearing, together with his recommendations for
16 review to the Board of Trustees for action thereon;

17 (e) determine what discharge or deposit of sewage,
18 industrial wastes, or other wastes, constitutes pollution
19 as herein defined, and establish standards whereby and
20 wherefrom, as far as reasonably practicable, it can be
21 ascertained and determined whether such discharge or deposit
22 constitutes pollution as herein defined:

23 (f) perform all other duties and exercise all
24 other powers required of him and granted under this
25 ordinance.

1 Section 9. Right to Appeal or Amend Ordinance.

2 The District reserves the right at any time and from time to
3 time to repeal or amend this ordinance or any provisions
4 thereof; and all permits are issued subject to such right.

5 Section 10. Penalties. Whoever violates any
6 provision of this ordinance, or any amendment hereafter
7 adopted, or fails to comply with an order of the Board of
8 Trustees in accordance with the provisions of this ordinance,
9 shall be fined one hundred dollars (\$100.00). Each day's
10 continuance of such violation or failure shall constitute
11 a separate offense. The Attorney for the District shall take
12 such action as he may deem necessary to enforce collection
13 and payment of all penalties, to restrain violations of, and
14 to compel compliance with, the provisions of this ordinance.

15 Section 11. Effect of Court Decisions. If the
16 provisions of any section of this ordinance shall be declared
17 unconstitutional or invalid by the final decision of any
18 court of competent jurisdiction, the provisions of the remain-
19 ing paragraphs shall nevertheless continue in full force
20 and effect.

21 Section 12. This ordinance shall be in force from
22 and after its passage.

23 Approved:

24 James M. Whalen, President, Board of Trustees of
25 the Sanitary District of Chicago.

1 July 11, 1946.

2 Approved as to Form and Legality:

3 James V. Sallemi, Special Attorney.

4 Ernest Buehler, Attorney

5 Mr. Colianni moved the passage of the Ordinance.

6 On roll call the motion was carried by the

7 following vote:

8 Yeas - Messrs. Baran, Colianni, Friedman, Kelley,

9 Maciejewski, Polodna, Touhy and Whalen - Eight.

10 Nays - None.

11 Ordinance adopted by the Board of Trustees of the
12 Sanitary District of Chicago on July 11, 1946. Reprinted from
13 Proceedings, July 11, 1946, pp. 1151-1152. Based on an Act
14 to add Section 7bb to "An Act to create Sanitary Districts and
15 to remove obstructions in the Des Plaines and Illinois Rivers,
16 approved May 20, 1889, as amended."

17 MR. CHESROW: Thank you.

18 The Industrial Waste Ordinance passed in the summer
19 of 1962 declares as one of its principal concerns the pro-
20 hibition of the discharge "of industrial wastes, which will
21 cause pollution, directly into the waters, water courses or
22 natural outlets within the boundaries of the Sanitary District."
23 (Art. III, Para. 1).

24 The District sees to it that the Ordinance is
25 vigorously enforced, first, by attempting to get the volun-

1 tary cooperation of the party charged with violating the
2 Ordinance in removing the harmful condition, and, if such
3 efforts fail, by forcefully utilizing the sanctions pro-
4 vided by the Ordinance against the offending party. The
5 effect of the Ordinance upon the reduction of water pollution
6 has been highly successful.

7 The District does not rest on its laurels. The
8 increase in population, coupled with the vast expansion of
9 industrial works and services, and the tremendous strides
10 made in the discovery and development of new scientific
11 methods and techniques confront the District with new
12 challenges every day.

13 The District meets these challenges.

14 Among other things, it conducts a vast and
15 intensive research program, including assistance from great
16 universities in the Middle West, and, by the way, is in the
17 process of improving and expanding its research facilities,
18 through its current building program of what will be the
19 country's most modern laboratory facilities, at the cost of
20 a million and a half dollars.

21 Yet, all these facilities and methods would be
22 indeed futile, if the District did not possess the proper
23 brain power to run these facilities. It is no exaggeration
24 that the men heading the District's various operations and
25 departments are recognized and renowned authorities in their

1 field.

2 Thus, the General Superintendent, Mr. Vinton W.
3 Bacon, has been formerly the chief executive officer of the
4 California State Water Pollution Control Board, certainly a
5 man intimately acquainted with water pollution problems.
6 The Director of Laboratories, Dr. A. Joel Kaplovsky, who came
7 to the District on the recommendation of Mr. Bacon holds
8 a Ph.D. degree in sanitary engineering; before his coming to
9 the District, he served as Director of the Delaware Water
10 Pollution Commission, again, a man familiar with water
11 pollution questions.

12 I could go on and name the other outstanding
13 experts of the District whom I have asked to join me at
14 this conference, so that they may, when the opportunity
15 arises, answer any pertinent questions and give us the
16 benefit of their expert knowledge. I have prepared for each
17 of them a short statement listing their qualifications,
18 and I herewith ask respectfully that these statements be
19 included in the record of the proceedings of this conference.

20 CHAIRMAN STEIN: Without objection, they will appear
21 at this point.

22 MR. CHESROW: Mr. Vinton W. Bacon, the General Superin-
23 tendent of the Metropolitan Sanitary District of Greater
24 Chicago, was selected to his present position by a citizens'
25 committee after a nationwide search. He received his degree

1 in civil engineering with honors from the University of
2 California in 1940, ranking first in a class of over one
3 hundred graduating students. He belonged to the following
4 college honorary societies: Tau Beta Pi, National engineering
5 honor society; Chi Epsilon, National civil engineering
6 society, and Sigma Xi, National scientific society, of
7 which he is an associate member.

8 After his graduation, Bacon became a junior
9 engineer on a sewage disposal survey projecting the future
10 physical and financial load of handling the domestic sewage
11 and industrial wastes from the burgeoning population and
12 booming factories of the San Francisco East Bay area.

13 Next, as assistant engineer and then engineer of
14 the Los Angeles County Sanitation Districts, he designed
15 extensions to sewage treatment plants and trunk sewers and
16 conducted cost studies and analyses of the county's treat-
17 ment plant operations.

18 During World War II, as a lieutenant and later
19 captain attached to the United States Public Health Service,
20 he served as a senior sanitary engineer inspecting water
21 supplies and sewerage systems. While in the army he organ-
22 ized and directed a typhus fever control project in San
23 Antonio, Texas.

24 Following the war, he directed the work which led
25 to the organization of the big Orange County, California,

1 sewage and waste disposal system and then moved to Berkeley,
2 California, to head a sanitary engineering research project
3 for the University of California which looked into all
4 technical aspects of the disposal of garbage, sewage and
5 industrial wastes.

6 From this position he moved on to the California
7 State Water Pollution Control Board, to become the executive
8 officer of that agency. He served in that position from
9 April 1950 to October 1956, developing details of state-wide
10 policies for the control of water pollution. In November
11 1956, he accepted a call to Tacoma, Washington, to serve as
12 the Executive Secretary of the Northwest Pulp and Paper
13 Association. In that capacity he developed, among other
14 things, research programs on pulp and paper processes,
15 waste treatment methods, and the influence of wastes on
16 fishery resources. He remained with the Association until
17 his appointment as General Superintendent of the Metropolitan
18 Sanitary District of Greater Chicago in 1962.

19 Mr. Vinton Bacon holds licenses as a registered
20 professional engineer in California, Oregon, Illinois and
21 Washington. He is a fellow of the American Society of
22 Civil Engineers, a member of the Water Pollution Control
23 Federation in the Pacific Northwest chapter, of the American
24 Water Works Association, the Technical Association of the
25 Pulp and Paper Industry, Air Pollution Control Association and

1 has been a diplomat of the American Academy of Sanitary
2 Engineers since the formation of that organization in 1956.

3 The American Society of Civil Engineers honored
4 him with its Research Prize in 1956, "in recognition of an
5 outstanding contribution to the art of waste water reclam-
6 ation." He was the fourth man to receive this award.

7 George A. Lane is the Chief Attorney for The
8 Metropolitan Sanitary District of Greater Chicago, a position
9 he has occupied since January 1, 1959.

10 During his incumbancy in this position, he had
11 charge of much important litigation, including the Lake
12 Diversion Case pending in the Supreme Court of the United
13 States before Special Master Albert B. Maris, the suit in
14 the U.S. District Court against General Electric, Westing-
15 house and others for damages for overpayment on electrical
16 equipment bought by the District and numerous other suits
17 in the Circuit and Appellate Courts and the Supreme Court
18 of the State of Illinois; also numerous suits in the U.S.
19 District Court and before the various Commissions, both
20 State and Federal.

21 His work in connection with the Lake Diversion
22 litigation and the legal aspects of the New Zimmermann
23 Process makes him an outstanding authority on the matter
24 of Water Pollution and its correction.

25 Mr. Lane has been practicing before the Illinois

1 Bar since 1928 and the United States Supreme Court since 1959.
2 He received his J.D. Degree in 1928 and a B.A. Degree in 1925
3 from Loyola University of Chicago and has been approved by
4 committees of the Chicago Bar Association as qualified for a
5 position of Judge of the Circuit Court of Cook County. He is
6 a member of the Chicago Bar Association, the Illinois State
7 Bar Association and numerous other political, civic and
8 religious organizations.

9 Colonel Frank W. Chesrow, President of the
10 Metropolitan Sanitary District of Greater Chicago, has held
11 that position since December of 1958. Prior to that time, he
12 served as a Trustee of the District for twelve years, having
13 thus acquired a working knowledge of the sewage and water
14 pollution problems which beset a modern large metropolitan
15 area.

16 Colonel Chesrow is a graduate of Valparaiso
17 University (Ph.C.) and of the U. S. Army School of Sanitary
18 Engineering. He brought to his position on the board of
19 trustees of the Sanitary District many years of experience
20 with sanitation problems. From 1932 to 1942, as a member of
21 the Army Reserve, he was a sanitary engineer and instructor
22 and consultant on industrial wastes, water supply and sewage
23 disposal. He went into active military duty in June 1942.

24 In 1943, he organized and trained the personnel of
25 the 118th Station Hospital, the first station hospital to be

1 set up by the American forces in Europe during World War II.
2 This hospital played a leading role under Colonel Chesrow's
3 supervision, as Administrative Officer, in combating a typhus
4 epidemic in Naples, Italy, from October 1943 through 1944,
5 caused by the destruction of sewage and water facilities.
6 During that period, temporary sanitary and water facilities
7 were set up under Colonel Chesrow's direction and other
8 health measures instituted with such success that not one
9 member of the armed forces became afflicted with typhus.

10 Continuing in his capacity as a military
11 sanitation engineer, he supervised numerous sanitary
12 installations for troops and civilians in war torn areas
13 and eventually moved into the General Staff Command where
14 he served as consultant on Sanitary Engineering in Military
15 Government.

16 As a result of these achievements, Colonel Chesrow
17 received more than thirty decorations from the American,
18 French and Italian governments and the Vatican which
19 recognized Colonel Chesrow with one of its most coveted
20 appointments as Papal Chamberlain - in recognition of this
21 outstanding war record and humanitarian efforts in behalf
22 of civilians.

23 With this wealth of background, he came to the
24 Sanitary District as a Trustee in 1948. Since that time, he
25 has introduced and participated in the inauguration of many

1 innovations in sewage treatment. Among these, was the first
2 pilot plant for the wet air oxidation for the disposal of
3 sewage sludge waste in a large metropolitan area. This
4 plant is one of the many significant contributions to the
5 science of sewage disposal that has made the Sanitary
6 District recognized throughout the world and described by
7 Surgeon General Luther L. Terry as recently as last December
8 as, "one of the best, most efficient, and most superbly
9 maintained waste treatment plants in the world."

10 Mr. Philip Furlong, Chief of the Maintenance and
11 Operation Department of The Metropolitan Sanitary District
12 of Greater Chicago has held this position for the last
13 fifteen years.

14 A resume of the educational and experience
15 background of A. Joel Kaplovsky, Ph.D., Director of Labora-
16 tories and Research and Development.

17 1. Present position is Director of Laboratories and
18 Research and Development for The Metropolitan Sanitary District
19 of Greater Chicago since July 1, 1963.

20 2. Director of the Water Pollution Commission,
21 State of Delaware. Directed Water Pollution Commission
22 activities from January, 1950 to July, 1963, including
23 administration, operations and research phases. In
24 addition, Alternate State Coordinator of Delaware with
25 respect to the Corps of Engineers Water Resources Survey of

1 the Delaware Valley, Co-Author of Delaware's intrastate Water
2 Resources Survey (Now Appendix O of Corps of Engineers
3 Delaware River Report).

4 3. Received B.S. Degree in 1940 at Rutgers
5 University, majoring in Chemistry and minoring in Sanitation.

6 4. Received M.S. Degree, majoring in Sanitation
7 and minoring in Bacteriology and Microbial Physiology.

8 5. Received Ph.D. Degree at Rutgers University,
9 majoring in Sanitary Engineering and minoring in Limnology.

10 6. Member of the Society of Sigma Xi (Research
11 Society).

12 7. Completed three Radiological Health Training
13 Courses.

14 8. Superintendent of Waste Treatment Plant, Upper
15 New York State.

16 9. Served as an officer in the Sanitary Corps,
17 U.S. Army, in the Philippines and Korea.

18 10. Licensed Professional Engineer in the State of
19 Illinois, Delaware, Pennsylvania and Maryland.

20 11. Member of American Academy of Sanitary
21 Engineers.

22 12. Consultant to the Public Health Service.

23 13. Recipient of A. S. Bedell Award for outstanding
24 personal service in the sewage and industrial wastes field.

25 14. Member, Delaware Air Pollution Authority,
1957-1963.

1 15. Water Quality Committee Member of Incodel from
2 1950 to 1962.

3 16. Chairman, Short Course School for Water and
4 Waste Plant Operator, 1950-1957.

5 17. Past President, Maryland-Delaware Water and
6 Sewage Association.

7 18. Member, Governor's Delaware Water Resources
8 Study Committee, 1954-1960.

9 19. Member, Governor's Ad Hoc Water Resources Com-
10 mittee from 1961 - 1963.

11 20. Member, Delaware Chamber of Commerce Water
12 Quality Committee.

13 21. Author of 40 technical and 10 non-technical
14 publications in the field of water and waste.

15 Don R. Brown, Engineer of Waterways Control,
16 The Metropolitan Sanitary District of Greater Chicago.

17 1925 - B.S., Civil Engineering, University of
18 Nebraska. Licensed Professional Engineer in Illinois.

19 1926 --Employed by The Metropolitan Sanitary
20 District of Greater Chicago; assigned to Hydraulic Section,
21 (later named Waterways Control Section).

22 1932 - L.L.B., Kent College of Law.

23 Licensed to practice law in Illinois after having
24 successfully passed the bar examination.

25 1954 - Engineer of Waterways Control, The Metro-
politan Sanitary District of Greater Chicago.

1 Responsible for the operation of seventy-one (71)
2 miles of Canal System, and the controlling structures influ-
3 encing same.

4 I would like at this time to introduce the gentlemen
5 from the District who have joined me at this conference, and
6 as I call their name, I ask each of them to stand up:

7 Trustee John B. Brandt, Purchasing.

8 Trustee John E. Egan, Chairman, Committee on
9 Real Estate.

10 Trustee Vincent D. Garrity.

11 Trustee Valentine Janicki, Chairman, Committee
12 on Flood Control Damage after Storm.

13 Trustee Marshall Korshak, Chairman, Judiciary
14 Committee.

15 Trustee Nicholas J. Melas, Chairman, Public
16 Health and Welfare.

17 Trustee Earl E. Strayhorn, Chairman, Committee on
18 Lake Diversion, Pension, Personnel Relations, and Civil
19 Service.

20 Mr. Vinton W. Bacon

21 Our Attorney, our Chief Attorney, Mr. George A.
22 Lane, who is here on my left is the Chief Attorney for The
23 Metropolitan Sanitary District of Greater Chicago, a position
24 he has occupied since January 1, 1959.

25 Mr. Lane drafter^{of} our Industrial Waste Ordinance.

1 His work in connection with the Lake Diversion litigation and
2 the legal aspects of the New Zimmermann Process make him an
3 outstanding authority on the matter of the legal aspects of
4 water pollution and its corrections.

5 Mr. Joe Kaplovsky is presently employed as Director
6 of Laboratories and Research and Development for the Metro-
7 politan Sanitary District of Greater Chicago since July 1,
8 1963, having received his B.S. and Ph.D. Degrees at Rutgers.

9 Dr. Kaplovsky served as Director of the Water
10 Pollution Commission in the State of Delaware, was Super-
11 intendent of Waste Treatment Plant in Upper New York, an
12 Officer in the Sanitary Corps of the United States Army,
13 served in the Philippines and Korea.

14 He is a consultant to the Public Health Service,
15 recipient of the A. S. Bedell Award for outstanding personal
16 service in the sewage and industrial wastes field; he is a
17 member of the Delaware Air Pollution Authority, he is the
18 past president of the Maryland-Delaware Water and Sewage
19 Association and also the Governor's Delaware Water Resources
20 Study Committee.

21 Dr. Kaplovsky, I might add, is the author of some
22 40 technical papers in the field of water and wastes.

23 Our engineer of water control, Don R. Brown, has
24 a B.S. in Civil Engineering and is a graduate of law from
25 the Kent College.

1 Mr. Brown has been with the District for 39 years,
2 and is presently employed as Chief Engineer of Water Control.

3 He is responsible for the operation of seventy-one
4 miles of canal system and the controlling structure influencing
5 same.

6 Our Chief of Maintenance and Operation, Philip
7 Furlong, came to us from the United States Navy.

8 He is presently holding the position of Chief of
9 Maintenance and Operation of the District. He has been with
10 us for the past fifteen years.

11 One of the plants that he is in charge of is the
12 Calumet Plant that has come under question here.

13 We have Mr. Norval E. Anderson who came to the
14 District in 1920, after having graduated from the University
15 of Illinois.

16 He is now with us. He has been Assistant Chief
17 Engineer at the District and upon retirement of our Chief
18 Engineer, he was acting Chief.

19 Mr. Anderson is presently being retained as a
20 consulting engineer.

21 Before calling on our General Superintendent, Mr.
22 Bacon, I wish to again emphasize that it is the will and
23 desire of The Metropolitan Sanitary District of Greater
24 Chicago to cooperate with the Federal Government and State
25 and other governmental agencies in ridding the waters of Lake

1 Michigan of any pollution; at the same time, I would like
2 to assure this conference and the people living within
3 The District's boundaries of the District's continued
4 determination to curb and to eliminate water pollution
5 within the territory under its jurisdiction.

6 Proof of the quality of our operation and our
7 desire to cooperate is best emphasized by public opinion
8 expressed by two outstanding authorities.

9 One was early in 1962, Mr. Gordon E. McCallum,
10 Chief of the Division of Water Supply and Pollution Control
11 of the United States Public Health Service.

12 Mr. McCallum said, and I quote, "I think certainly
13 since we have been working on the survey, the operation of
14 the Sanitary District Treatment Works has been efficient.
15 There have been charges that it has not been, but our observa-
16 tions have not so indicated. It is efficiently operated."

17 Just recently, last December 1964, Dr. Luther
18 Terry of the United States Public Health Service appeared
19 in Chicago and gave a talk at the Executive Club.

20 I would like to quote from his talk just in brief.

21 "Today Chicago has one of the best, most efficient,
22 most efficiently maintained waste treatment plants in the
23 world. This modern complex of facilities treats the waste
24 of five million people and thousands of industries every day.
25 The modern treatment methods remove approximately 90 percent of

1 all organic wastes."

2 Now, I would like to present our General Superinten-
3 dent, Mr. Vinton W. Bacon, the General Superintendant of
4 the Metropolitan Sanitary District, who is an outstanding
5 authority in sanitary engineering and water pollution.

6 He received his degree in Civil Engineering with
7 honors from the University of California in 1940 and is a
8 member of many honorary and scientific societies.

9 During World War II, he was a Captain attached to
10 the United States Public Health Service as a senior sanitary
11 engineer. He was Chief Executive Officer of the California
12 State Water Pollution Control Board and later Executive
13 Secretary of the Northwest Pulp and Paper Association, where
14 he remained until his appointment as General Superintendent
15 of the District on October 22, 1962.

16 Among the many honors he received is one for his
17 contribution to waste water reclamation by the American
18 Society of Civil Engineers who honored him with its research
19 prize in 1956.

20 Mr. Vinton Bacon.

21 MR. BACON: Mr. Chairman, conferees, ladies and
22 gentlemen:

23 My name is Vinton W. Bacon. I am General
24 Superintendent of The Metropolitan Sanitary District of
25 Greater Chicago, on whose behalf I am speaking today.

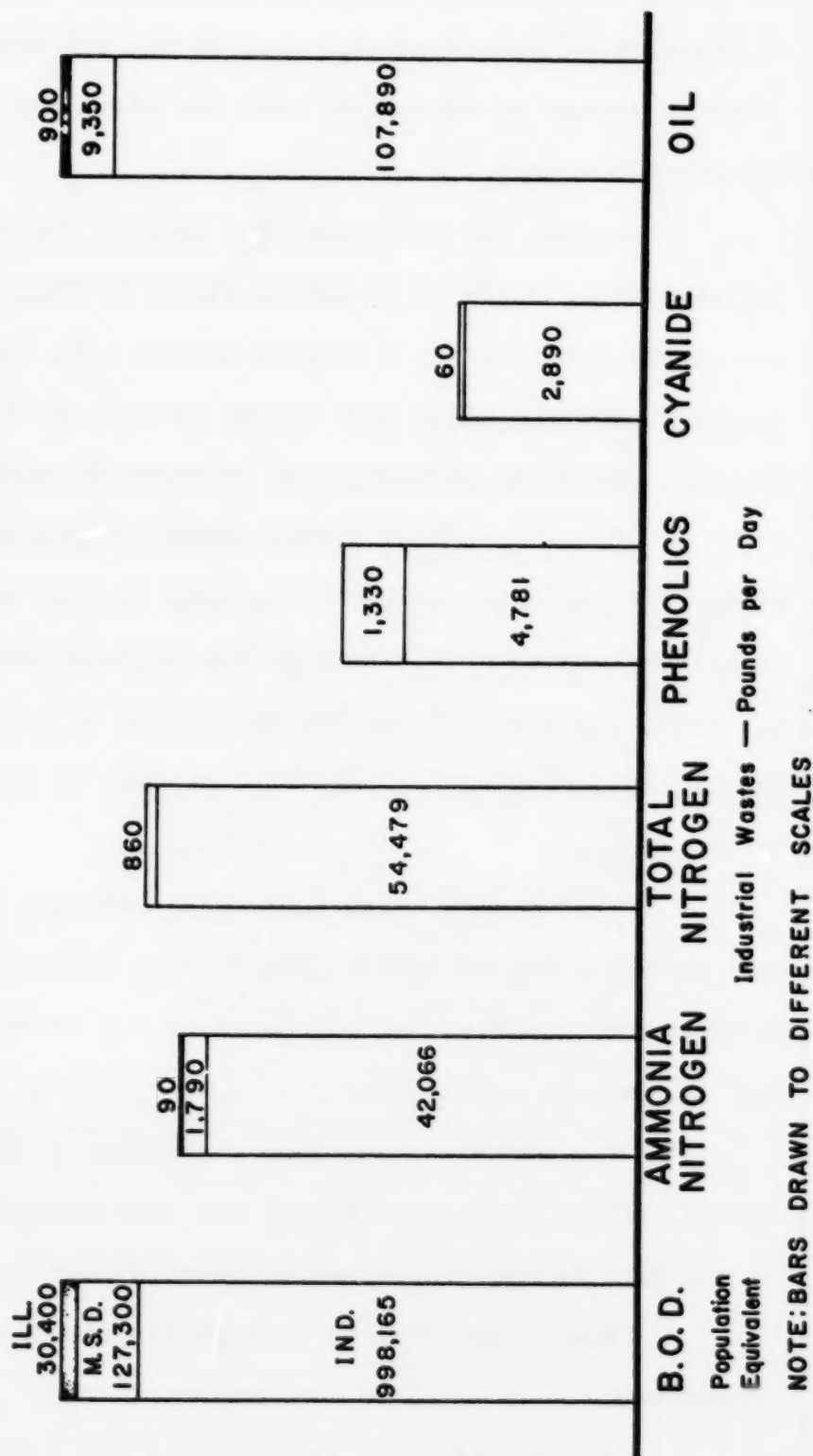
1 The ultimate goal as far as The Metropolitan
2 Sanitary District of Greater Chicago is concerned is to keep
3 Lake Michigan as clean and free of pollution as possible.
4 In doing so, it is also the goal of the District to improve
5 the quality of the water in the drainage ways which were
6 built to divert wastes away from the Lake. To these ends,
7 Illinois and its agencies welcome this conference and record
8 their desire to cooperate in every way.

9 Since one of the purposes of this conference is to
10 gain and understand factual information on sources of wastes
11 and their ultimate disposal, Figure 1 was prepared, utilizing
12 the data on Table VI-2, VI-5 and VI-6 of the "Report on
13 Pollution of the Waters of the Grand Calumet River, Little
14 Calumet River, Calumet River, Lake Michigan, Wolf Lake and
15 Their Tributaries, Illinois - Indiana," dated February 1965,
16 by the U. S. Public Health Service. (See Page 1495)

17 Figure I compares waste loads at the source, that
18 is, the point of outfall or discharge for six parameters of
19 pollution; population equivalent based on organic load as
20 measured by BOD (biochemical oxygen demand), ammonia
21 nitrogen, total nitrogen, phenolics, cyanide, and oil.

22 The sources are divided into three areas of origin:
23 Indiana (as shown at the bottom of each bar graph, and in
24 brown on the colored slide); the Metropolitan Sanitary
25 District of Greater Chicago (as shown in the middle of each

Figure 1.
WASTE LOADS AT SOURCE



1 bar graph and in orange color on the slides); and the State
2 of Illinois -- other than the area within the Sanitary
3 District (shown at the top of each bar graph and in green on
4 the colored slide).

5 Within the individual bar graphs, the quantities
6 are as near to scale as it was possible to achieve, but the
7 bar graphs are drawn to different scales. The tabular
8 values from which these were drawn, as well as the next two
9 figures, are given in Exhibit I, attached to this statement.

10 Based on the pollution parameter population equiv-
11 alent, the Sanitary District's maximum load to Lake Michigan,
12 if all the wastes originating in the District were to reach
13 the Lake, would be 127,300 out of a total of 1,155,865
14 population equivalent or only 11.0 percent of the waste load
15 at the source.

16 The Sanitary Board represents only 4.1 percent of
17 the ammonia nitrogen load at the source, 1.5 percent of total
18 nitrogen, 21.8 percent of phenolics, 2.0 percent of cyanides,
19 and 7.9 percent of the oil.

20 The contributions from the State of Illinois area
21 outside of the Sanitary District are even smaller according
22 to the data in the Public Health Service Report.

23 Now, I am going to extemporize for just a couple
24 of minutes.

25 If you will turn to Exhibit I and I think generally,
all of you have a copy of the Exhibit and I know the conferees
have.

(See Page 1497)

VINTON BACON

EXHIBIT 1

The Metropolitan Sanitary District of Greater Chicago - Indiana - Illinois Pollution

WASTE LOADS TO LAKE MICHIGAN

PRESENT WASTE LOAD	LOCALITY SOURCE	POPULATION EQUIVALENT			INDUSTRIAL WASTES - POUNDS				
		MUNI- CIPAL	INDUS- TRIAL	TOTAL	AMMONIA NITROGEN	TOTAL NITROGEN	PHENO- LICS	CYANINE	OIL
TOTAL LOAD FROM:(1)	Indiana	95,015	403,150	498,165	42,066	54,479	4,781	2,840	107,879
	Ill. - MSD	82,100	45,200	127,300	1,740	860	1,330	60	9,350
	Ill. - Other	26,100	4,300	30,400	90			900	900
	Ill. - Total	108,200	49,500	157,700	1,830	860	1,330	60	10,250
	TOTAL	203,215	952,650	1,155,865	43,946	55,339	6,111	2,950	118,149
PORTION OF LOAD REACHING LAKE M. FROM:	Indiana (2)	73,314	403,150	476,464	42,066	54,479	4,781	2,840	107,890
	Ill. - MSD	4,852	5,420	15,272	1,086	860	380	60	7,898
	Ill. - Other	3,132	515	3,647	11				108
	Ill. - Total	12,984	5,935	18,919	1,096	860	380	60	8,006
	TOTAL	86,298	409,085	495,383	43,162	55,339	5,161	2,950	115,896
DEDUCTION WITH NORMAL L. LEVELS (3)	Indiana	1,726	0	1,726	0	0	0	0	0
	Illinois	7,547	3,460	11,007	62	0	76	0	178
	TOTAL	9,273	3,460	12,733	62	0	76	0	178
DEDUCTION O'BRIEN LOCK OPERATION (4)	Indiana	1,233	0	1,233	0	0	0	0	0
	Illinois	5,410	2,480	7,890	53	0	54	0	127
	TOTAL	6,643	2,480	9,123	53	0	54	0	127

- (1) Based on Tables VI-2, VI-5, VI-6, Report on Pollution - Illinois-Indiana, US NEW PHS.
- (2) Assuming Barrier Dam in Grand Calumet placed to exclude Hammond wastes from Illinois.
- (3) Due to record low Lake levels, Calumet River flows into Lake about 7% of time during dry weather. This will be eliminated when Lake levels return to normal.
- (4) Storm water reversals of Cal. R. occur about 5% of time; operation of O'Brien Lock will protect the eliminate.

1 It is on page 11 and I will wait until you find
2 it.

3 It is a table in long-hand.

4 Now, these are computations by Norval E. Anderson,
5 upon which the chart that was shown was based and upon which
6 the next two figures will be based.

7 Basically, this is as stated, waste loads to
8 Lake Michigan.

9 The first horizontal block you will notice is the
10 total load from the various sources. That is what you have
11 just seen and these figures are from the Public Health
12 Service document.

13 Now, the next horizontal block, labeled on the left,
14 "The Portion of Load Reaching Lake Michigan."

15 This is after we are going to make some deductions
16 as we will explain as we go along.

17 Then, the third figure will be after deductions
18 have been made to allow for the normal lake levels as shown
19 in the third horizontal grouping, and the deduction for the
20 closing of the O'Brien Lock under certain conditions which is
21 the fourth horizontal grouping.

22 Now, this table is backed up by computations,
23 Gentlemen. If you wish details, we can furnish that to you if
24 you find that it would help in your deliberations.

25 I might emphasize that some of the figures that we

1 used would not agree precisely with some of the figures in
2 your report. We are in the same ball park. We are in the
3 same realm of significant figures and we wouldn't quarrel with
4 them although we probably in some instances have more de-
5 tailed information.

6 The point is, we are starting with your figures
7 from your report and we will make adjustments due to
8 deductions that we think are justified.

9 Now, if you will turn to page 2, I am going to do
10 this in order to save you from having to come back.

11 On the next page, this is an estimate of the time
12 of reversal of the Calumet River during dry weather conditions
13 due to drop in level of Lake Michigan. (Exhibit 2) (See
14 Page 1500)

15 I simply want you to note this exhibit so I don't
16 have to ask you to turn to it again.

17 This is the computation made by our Water Waste
18 Control Engineer, Mr. Don Brown, where we are trying to
19 figure the best we can how many reversals we have due to low
20 lake levels.

21 Now, if you will turn to the next page, Exhibit 3,
22 you will notice Exhibit 3 is four pages long. (See Pages
23 1501 & ff)

24 In Exhibit 3 we list the sixteen industries we
25 will be talking about in the body of the statement. But,

ESTIMATED TIME OF REVERSAL OF CALUMET RIVER DURING DRY WEATHER CONDITIONS DUE TO DROP IN LEVEL OF LAKE MICHIGAN

MONTH	1960		1961		1962		1963		1964	
	HOURS	PER CENT	HOURS	PER CENT	HOURS	PER CENT	HOURS	PER CENT	HOURS	PER CENT
January	92	12.4	48	6.5	60	8.1	121	16.3	85	11.4
February	136	19.8	29	4.3	10	1.5	146	21.7	127	18.3
March	189	25.4	30	4.0	2	0.3	58	7.8	100.5	13.5
April	57	7.9	19	2.6	19	2.6	83	11.5	47	6.5
May	34	4.6	30	4.0	0	0	74	10.0	17	2.3
June	38	5.3	13	1.8	5	0.7	30	4.2	1.5	0.2
July	16	2.2	6	0.8	4	0.5	30	4.0	17.5	2.4
August	49	6.6	6	0.8	2	0.3	102	13.7	31	4.2
September	102	14.2	22	3.1	22	3.1	66	9.2	12.5	1.7
October	152	20.4	40	5.4	38	5.1	75	10.1	12.5	1.7
November	148	20.6	45	6.3	32	4.4	111	15.4	55.5	7.7
December	147	19.8	34	4.6	55	7.4	94	12.6	97	13.0
YEAR	1162 hrs.	13.2%	322 hrs.	3.7%	249 hrs.	2.8%	990 hrs.	11.4%	604 hrs.	6.9%

Average, 5 years = 7.6%

1500
EXHIBIT 2

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

CALUMET WATERWAY SYSTEM

INDUSTRIAL PLANT SUMMARY

Company	Waterway	(mgd) Volume of Discharge	lbs/day			PE Reduction	Present Treatment	Status
			BOD Initial	BOD Final	BOD Reduction			
U.S. Steel Company	Lake Michigan and Calumet River	498					2 thickeners for flue dust. Equipment for pickle liquor treat- ment, 17 scale pits. Oil skimmer. Domestic waste to sewer	Preliminary survey conducted. Arrangements made for immediate technical study
General Mills	Calumet River	0.03	1,500				Domestic wastes to sewer	Conducted technical study in Nov 1964. Notified of viola- tion. Under orders to correct.
Wisconsin Steel Co.	Calumet River	100					1 thickener for Susp. solids removal. Scale pits. Oil separator. \$600,000 waste treat- ment and recircula- tion system installed within past 2 years Domestic wastes to sewer	Conducted technical study in Feb 1965. Presently evaluating samples collected.
Interlake Iron Co	Calumet River	25	3,000				2 thickeners. Closed coke quency system. Light oil separator. Domestic waste to sewer	Technical study initiated Nov. 1964. Presently evaluating data collected
					-1-			Continued

EXHIBIT 3

1501

Company	Waterway	Volume of Discharge (mgd)	lbs/day			PE Reduction	Present Treatment	Status
			BOD Initial	BOD Final	BOD Reduction			
Republic Steel Co	Calumet River	85					2 thickeners. Scale pits. Closed coke quench water system Oil separators. Acid neutralize. Domestic wastes to sewer. Since 1958 2.5 million dollars spent and \$700,000 proposed for near future.	Preliminary info. obtained..Scheduled for formal technical study immediately.
Cargill Inc	Calumet River	0.06	12,500	700	11,800	70,800	New treatment system placed in operation in Feb. 1965. Oil removal, plus anaerobic-aerobic digestion. Also Acid neutralization. \$50,000 spent for new facilities	Initiated technical study in 1963. See info on "Present Treatment".
General Chemical	Calumet River	4.0					None. Domestic wastes to city sewer.	Technical studies in 1963 and 1964 showed acceptable wastes. Additional evaluation to be made in 1965.
Ford Motor Company	Calumet River	0.5	500				Treatment systems for chromate and paint wastes placed in operation in Dec 1964. New sewer installed in late '64 taking portion of waste load out of river. Spent \$64,000 on revisions.	Technical studies in 1963 and 1964. see "Present Treatment".

EXHIBIT 3 Cont'd.

Company	Waterway	(mgd) Volume of Discharge	lbs/day				PE Reduction	Present Treatment	Status
			BOD Initial	BOD Final	BOD Reduction	BOD Reduction			
Bulk Terminals	Calumet River	0.04	40					None	Technical study in Nov 1964. Notified of violation. Under orders to correct
Catalin Corp	Little Calumet	1.7	950					None	Technical study in 1964. Notified of violation and under orders to correct
Spencer Chemical Company	Little Calumet	1.5						In-plant control only.	Technical studies in 1963 and 1964 Plant approved after minor corrections made
Acme Steel Company	Little Calumet	48	2,000 (est)					Clarifier. Sca'e pits. Oil separators	Technical studies in 1963. Engineer- ing studies on do- mestic waste com- pleted. Presently obtaining bids on sewers for domestic wastes.
Chicago Brick Co	Little Calumet	0.2	670					None	Technical study in 1964. Notified of violation and under orders to correct.
Libby, McNeill & Libby	Little	0.38	3,600	0	3,600	21,600		New sewer in- stalled in 1964	Technical study in 1963. No longer discharging wastes to waterways

Company	Waterway	(mgd) Volume of Discharge	lbs/day				Present Treatment	Status
			BOD Initial	BOD Final	BOD Reduction	PE Reduction		
United Chemical	Grand Calumet	0.44	5,900	0	5,900	35,400	Grease separator.	Technical study in 1964. Under orders to prevent all dis- charges to river. Will complete \$400,000 system in 1965
Swift & Co	Grand Calumet	0.02					Evaporation Pond. No normal discharge to river	Keeping under surveillance.
<u>GRAND TOTAL</u>			30,660	700	21,300	127,800		

1 again, I must emphasize that I am calling this to your
2 attention now so that we don't have to come back to this
3 exhibit again.

4 We have, as you will see, listed company, waterway,
5 volume of discharge, BOD initial, BOD final, BOD reduction
6 and so forth and we give a statement as to the present
7 treatment and present status for each industry.

8 So, now if you will return with me back to page 2
9 of the text, we will not have to go back to the Exhibits
10 again.

11 I will read, beginning at the next to the last
12 paragraph, but, as has been repeatedly testified at this
13 conference, all of the wastes generated within the Sanitary
14 District do not reach the Lake but are carried away from
15 the Lake by withdrawals through the Calumet-Sag Channel.
16 This is the basic purpose of the Cal-Sag Channel. It is
17 only when the Calumet River reverses and flows toward the
18 Lake that effluents discharged into Calumet River and
19 tributaries reach the Lake.

20 The Calumet River reverses when an offshore wind
21 drops the Lake by as little as 0.3 foot. Using the records
22 of the gauging station at the mouth of the Calumet River,
23 reversals are indicated by a drop in level exceeding the
24 drop between the mouth and the Blue Island Controlling
25 Works. The number of hours of reversal of the Calumet River

1 during dry-weather conditions was estimated and is shown
2 in Exhibit 2 for the five-year period, 1960-1964. It
3 summarizes as follows:

4 For the year 1960, the number of hours of reversal
5 were 1,162 or 13.2 percent of the total time.

6 For 1961, 322 hours or 3.7 percent of the time.

7 For 1962, 249 hours or 2.8 percent of the time.

8 1963, 990 hours of reversal, or a total percent of
9 the time of 11.4 for percentage of the total time.

10 In 1964, 604 hours or 6.9 percent of the time it
11 was in reversal.

12 And the average for this five year period is 7.6
13 percent.

14 In a subsequent computation, 7 percent will be used,
15 but this can be practically eliminated with the operation of
16 the O'Brien Lock. However, that part of the river between
17 O'Brien Lock and the mouth of the Calumet River will continue
18 to reverse under low lake level conditions.

19 Reversals of flow also take place when the River
20 system is in flood. At a maximum, this would occur 5
21 percent of the time, and will be practically eliminated with
22 the operation of O'Brien Lock.

23 Thus, without the operation of O'Brien Lock, it
24 can be estimated, conservatively, that reversal of flow
25 occurs on the average, 12 percent or less of the total time.

1 This means that 88 percent of the waste load generated at
2 the source in the Sanitary District and discharged to the
3 Calumet system is carried away from the Lake through the
4 Cal-Sag Channel.

5 Figure 2 shows the resulting waste loads to Lake
6 Michigan. The color, position, and scale for the three areas
7 of the source remain the same as we had in Figure 1. (See
8 Page 1507)

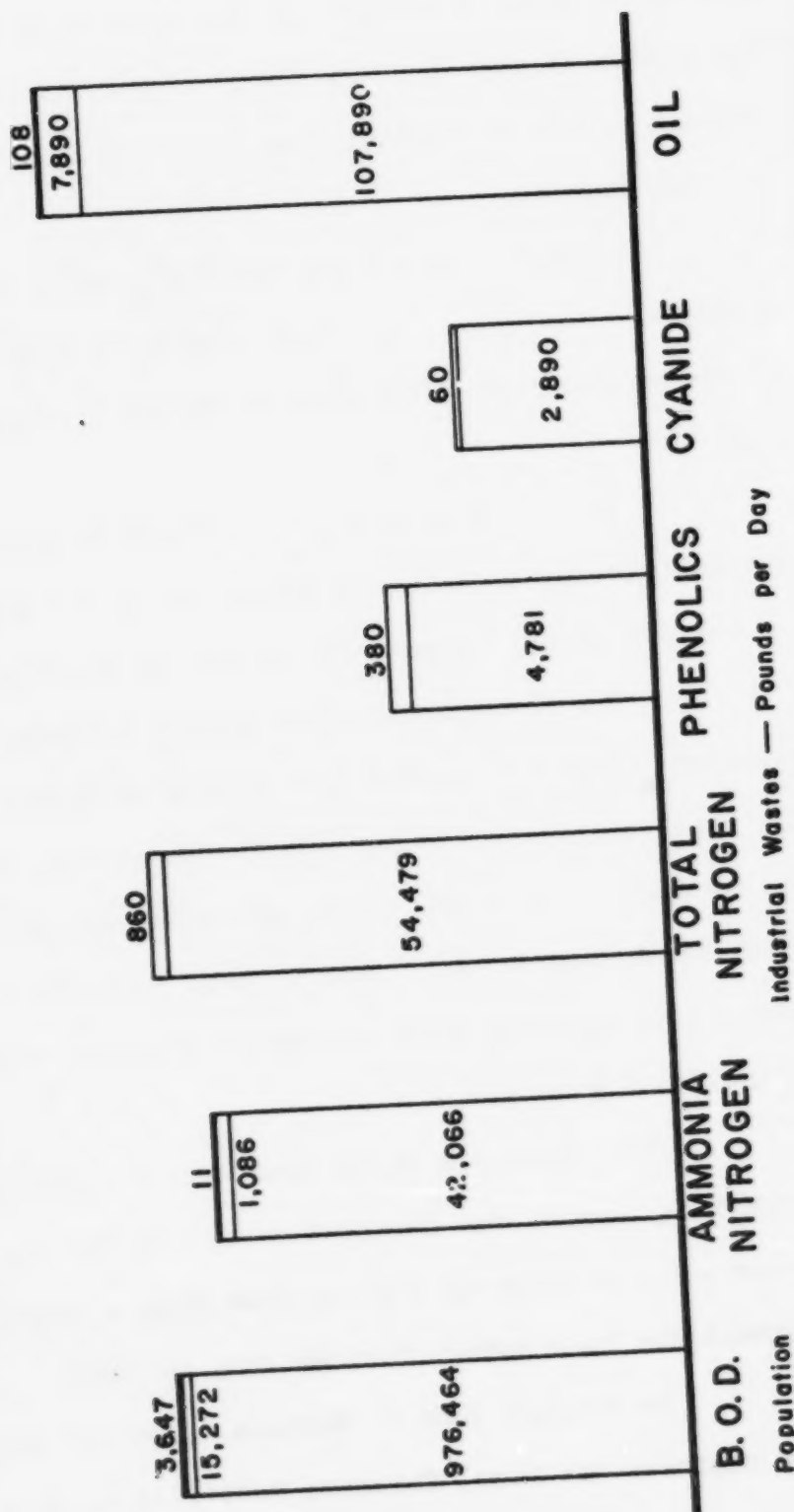
9 For the population equivalent as measured by BOD,
10 the Sanitary District contribution is 15,272 out of a total
11 of 995,383 or 1.5 percent of the wastes reaching the Lake.

12 The Sanitary District wastes reaching the Lake
13 represent only 2.5 percent for ammonia nitrogen, 1.6 percent
14 for total nitrogen, 7.4 percent for phenolics, 2.0 for cyanide,
15 and 6.8 percent for oil. Although these are still waters
16 which the District would like to keep completely out of the
17 Lake, it is apparent that the quantities are very small
18 in the total picture.

19 But there are means immediately available for
20 preventing much of the reversal caused by the low lake
21 levels - the closing of O'Brien Lock when a reversal is
22 imminent due to a sudden further drop in level.

23 As Colonel John C. Mattina, District Engineer, U.S.
24 Army Engineer District, Chicago, testified at this conference,
25 O'Brien Lock has been closed for pollution control purposes

Figure 2.
WASTE LOAD TO LAKE MICHIGAN



NOTE: BARS DRAWN TO DIFFERENT SCALES

1 on 12 occasions since January 17, 1965, at the Sanitary
2 District's request. Further, he stated it would be closed
3 in the future for this purpose at the request of the district.

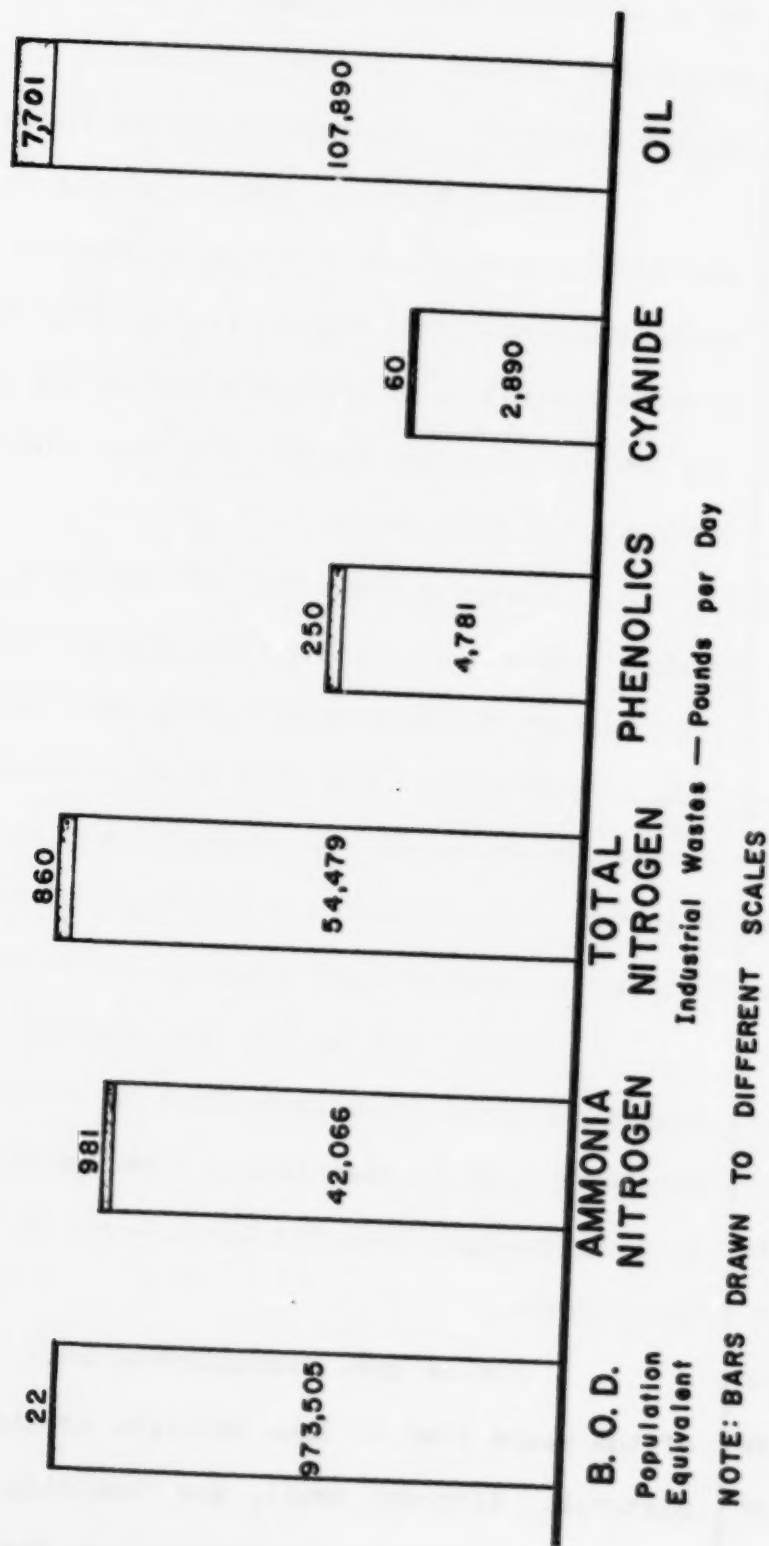
4 Now, Exhibit 1, which I showed you earlier, shows
5 the further deductions in waste discharges from the Metropolit-
6 an Sanitary District that will come about through the con-
7 sistent operation of O'Brien Lock, as the Corps of Engineers
8 has offered, and the return of normal lake levels, which is
9 a reasonable expectancy.

10 Applying these further deductions to Figure 2,
11 Figure 3 (See Page 1509) is the result showing the waste
12 load to Lake Michigan with normal lake level and O'Brien
13 Lock in operation. The quantities discharged with these
14 further improvements are so small that the Sanitary
15 District contributions and the State of Illinois contri-
16 butions are now grouped together and shown in green.

17 Going back to the bar graph on the left, the BOD
18 load of 22 population equivalent is infinitesimal. The
19 remaining load is essentially from the direct discharges
20 to Lake Michigan from the South Works of U. S. Steel
21 Corporation.

22 Now we have demonstrated what a very small portion
23 of the waste load to Lake Michigan originates in the Sanitary
24 District. Although small, the remaining industrial load
25 must be abated to the fullest extent possible.

Figure 3.
WASTE LOAD TO LAKE MICHIGAN
(NORMAL LAKE LEVEL & O'BRIEN LOCK)



1 In July of 1962, the Board of Trustees of the
2 Sanitary District enacted an industrial waste ordinance
3 applicable to all of the District, except Chicago. It was
4 developed in cooperation with the Chicago Association of
5 Commerce and Industry and with individual industrial firms.

6 Chicago has in draft form an almost identical
7 ordinance, and it is reasonable to expect its adoption.

8 As a part of the expanded industrial waste program,
9 laboratory facilities have been increased including the
10 purchase of a better and faster boat and floating laboratory,
11 and personnel in the industrial waste control section has
12 been increased.

13 Highlights of this program in the area under
14 consideration are:

15 1) Sixteen industry plant surveys, located as (See Page 1511)
16 shown on this Figure 4, have been either completed or are
17 in the process. This includes all of the major plants and
18 dischargers as follows, and our pointer will show them as
19 best he can:

20 U. S. Steel Company

21 General Mills

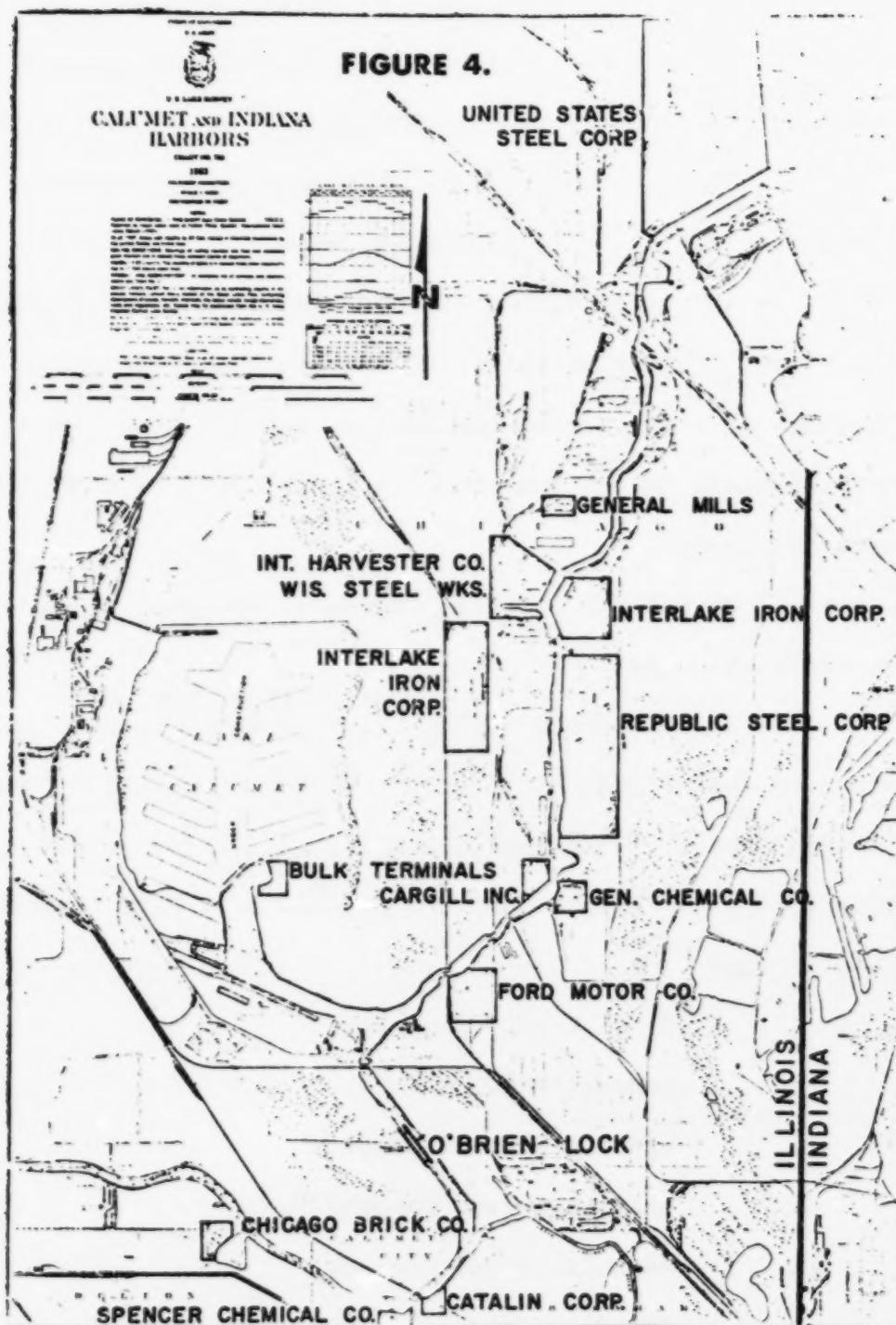
22 Wisconsin Steel Company

23 Interlake Iron Company

24 Republic Steel Company

25 Cargill, Inc.

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best available copy.



1 General Chemical Company
2 Ford Motor Company
3 Bulk Terminals
4 Catalin Corp.
5 Spencer Chemical Company
6 Acme Steel Company
7 Chicago Brick Company
8 Libby McNeil & Libby Company
9 United Chemical Company
10 Swift and Company

11 We state here on the prepared statement that more
12 detail on these surveys is given in Exhibit 3 which I have
13 shown you already.

14 Within the last two years, three of the industries
15 have reduced their BOD load from 22,000 pounds per day to
16 only 700, a reduction of 97 percent. These companies are
17 Cargill, United Chemical, and Libby McNeil & Libby.

18 The domestic sewage from all of the steel mills
19 is discharged to the Metropolitan Sanitary District
20 sewerage system with the exception of one mill. However,
21 this mill is in the process of obtaining bids for installa-
22 tion of new sewers in the immediate future. Thus, they are
23 not responsible for any bacterial pollution, with the one
24 exception noted.

25 The Public Health Service Report stated:

1 "Of particular significance, it (meaning
2 the Calumet Sewage Treatment Plant) treats coking
3 wastes from the steel plants located along the Calumet
4 River in Chicago so that phenolic and other con-
5 stituents of these wastes receive secondary treatment."

6 Now, actual conditions are not quite this complete,
7 as much as we would hope so. These are a few remaining coke
8 oven operations which result in phenolic discharges. But
9 changes in process and installation of new recovery systems
10 have markedly reduced the phenolic discharges in the last
11 few years.

12 Three plants, Chicago Brick Company, Ford Motor
13 Company and Bulk Terminals, with a population equivalent of
14 7,260 will provide correction in 1965. Due to the extensive
15 operations of some of the remaining plants, longer periods
16 for correction will be required.

17 Because they represent a considerable portion of
18 the industrial complex of the Calumet Area, the general
19 accomplishments of the steel mills deserve special
20 pictorialization.

21 This Figure (No. 5) shows a part of their waste
22 control programs, Scale recovery pits are utilized to prevent
23 tiny particles of mill scale from being discharged into the
24 adjacent waterways. (See Page 1514)

25 This picture shows the scale recovery pit for a



Figure 5: As part of their waste control programs, scale recovery pits are utilized to prevent tiny particles of mill scale from being discharged into the adjacent waterways. In the photo above showing the scale recovery pit for a plant's blooming mill, the stream of water carrying the mill scale may be seen near the middle of the far end of the pit. The scale settles to the bottom of the pit and is removed periodically along with oil which has risen to the surface of the water. The baffles in the foreground have been installed since the pit was put in operation to increase the pit's scale and oil recovery efficiency.

1 plant's blooming mill. The stream of water carrying the mill
2 scale may be seen near the middle of the far end of the pit.

3 The scale settles to the bottom of the pit and is
4 removed periodically along with oil which has risen to the
5 surface of the water.

6 The baffles in the foreground have been installed
7 since the pit was put in operation to increase the pit's
8 scale and oil recovery efficiency.

9 (Figure 6) As part of the steel company's waste
10 control programs, large settling basins, such as this one,
11 are used to remove blast furnace dust from water being dis-
12 charged into the waterway. (See Page 1516)

13 Flue dust, which consists of fine iron oxide
14 particles produced in the blast furnace, is pumped into the
15 settling basin, called a thickener. The tiny particles of
16 iron oxide settle to the bottom of the basin in a thick
17 sludge, and the cleaned water is returned to the waterway.

18 The accumulated flue dust is removed from the
19 thickener, dried and eventually recharged back into the
20 blast furnace. Because of the high cost of producing raw
21 material for the blast furnace in this way, this process is
22 utilized only for its waste control benefits.

(See Page 1517)

23 (Figure 7) In the coke-making process, coal is
24 carbonized to remove coal tars and gases, which, in turn, are
25 processed through various units and recovered as by-products

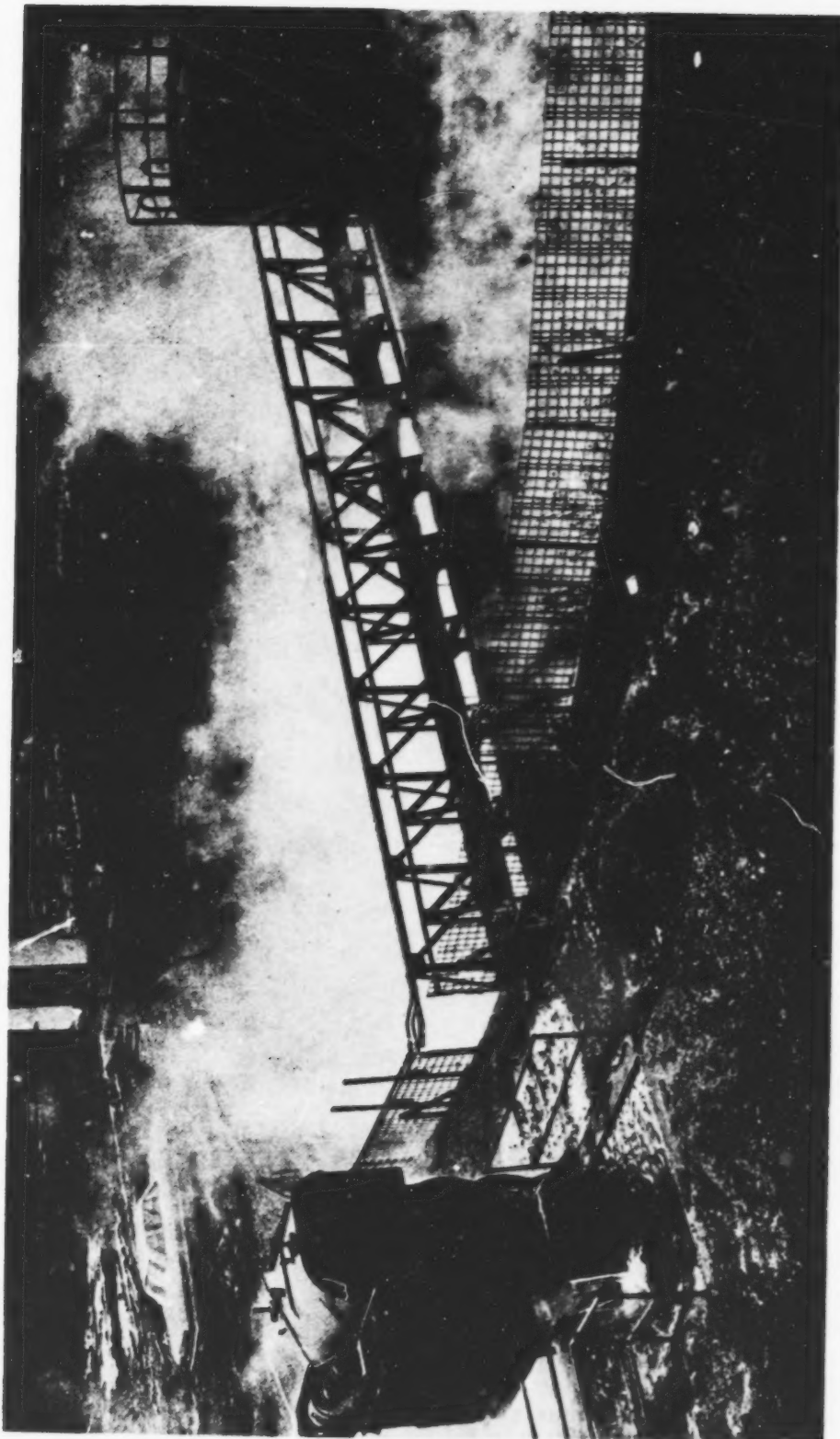


Figure 6: As part of the steel company's waste control programs, large settling basins (such as the above) are used to remove blast furnace flue dust from water being discharged into the waterway. Flue dust, which consists of fine iron oxide particles produced in the blast furnace, is pumped into the settling basin, called a thickener. The tiny particles of iron oxide settle to the bottom of the basin in a thick sludge, and the cleaned water is returned to the waterway. The accumulated flue dust is removed from the thickener, dried and eventually recharged back into the blast furnace. Because of the high cost of producing raw material for the blast furnace in this way, this process is utilized only for its waste control benefits.

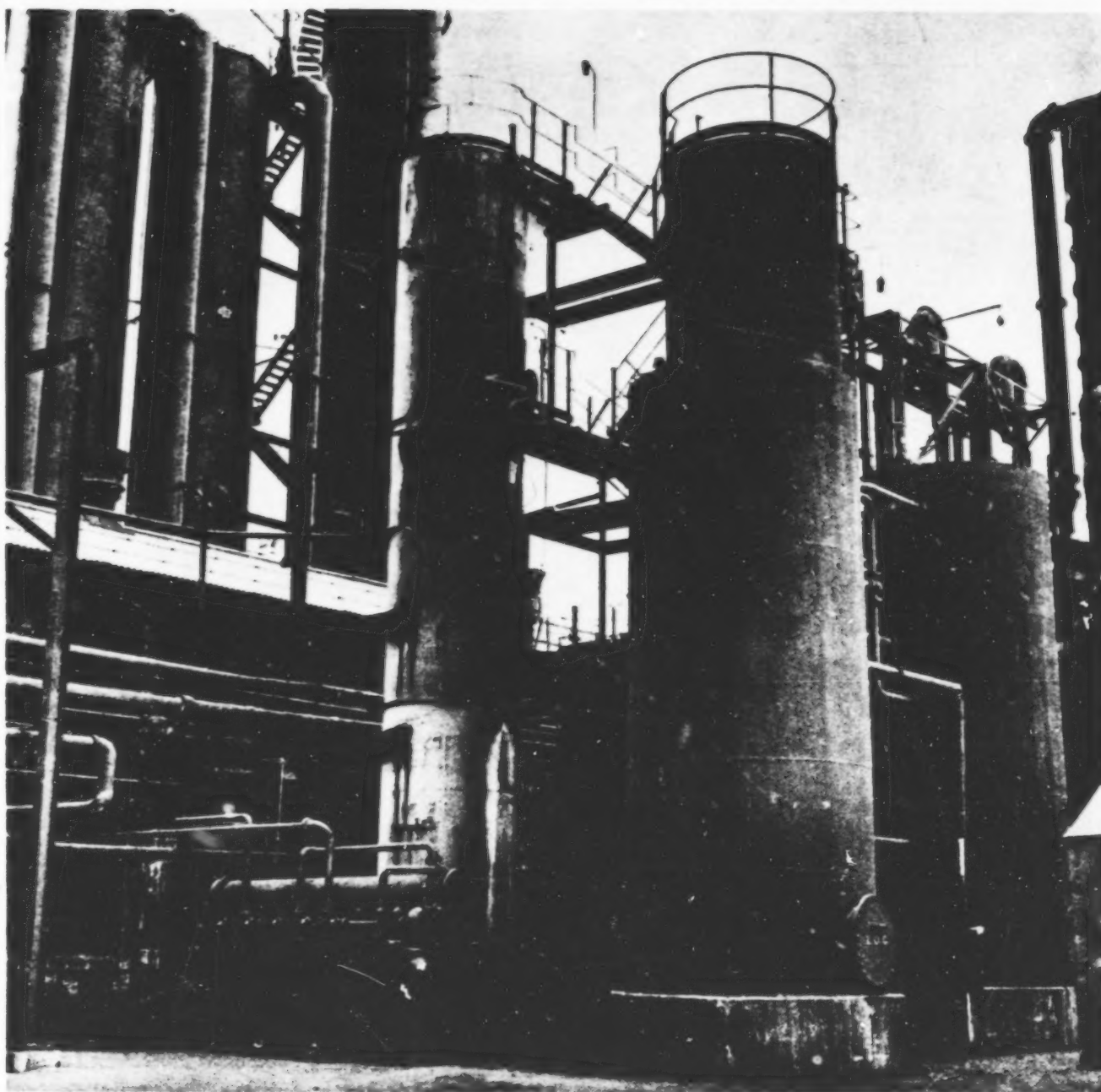


Figure 7: In the coke-making process, coal is carbonized to remove coal tars and gases, which, in turn, are processed through various units and recovered as by-products at a steel plant. As part of the waste control program at one of the steel mills on the Calumet River, the large tanks in the center of the photo above are used to recover phenols produced in the coke-making process and prevent them from being discharged into the waterway. Waste water from the plant's by-product recovery operations is then used to quench the coke when it is removed from the coke ovens. The plant's closed quench system thus eliminates the need to use water directly from the river.

1 at a steel plant.

2 As part of the waste control program at one of the
3 steel mills on the Calumet River, the large tanks in the
4 center of the photo are used to recover phenols produced in
5 the coke-making process and prevent them from being dis-
6 charged into the waterway. Waste water from these units is
7 then discharged into the waterway. Waste water from these
8 units is then discharged to the District's sewer system for
9 secondary treatment at the sewage treatment works. Waste
10 water from the plant's by-product recovery operations is also
11 connected to the sanitary sewer system.

12 Although these photos were taken from one company,
13 Republic Steel, they are typical of what is being done by
14 the five companies along the Calumet system.

15 (Figure 8) Molten slag from U.S. Steel's South
16 Works blast furnaces becomes a fluffy white material about
17 the consistency of popcorn when quenched in water-filled pits.
18 Almost all of it settles. (See Page 1519)

19 However, some of it floats. Particles that escape
20 over the weir of the pits are trapped by rotary screens en-
21 cased in rectangular boxes below the weir. South Works
22 engineers designed these screens to intercept the popcorn
23 slag particles before they escape.

24 South Works has not been able to maintain a hundred
25 percent performance all of the time, since the abrasive edges

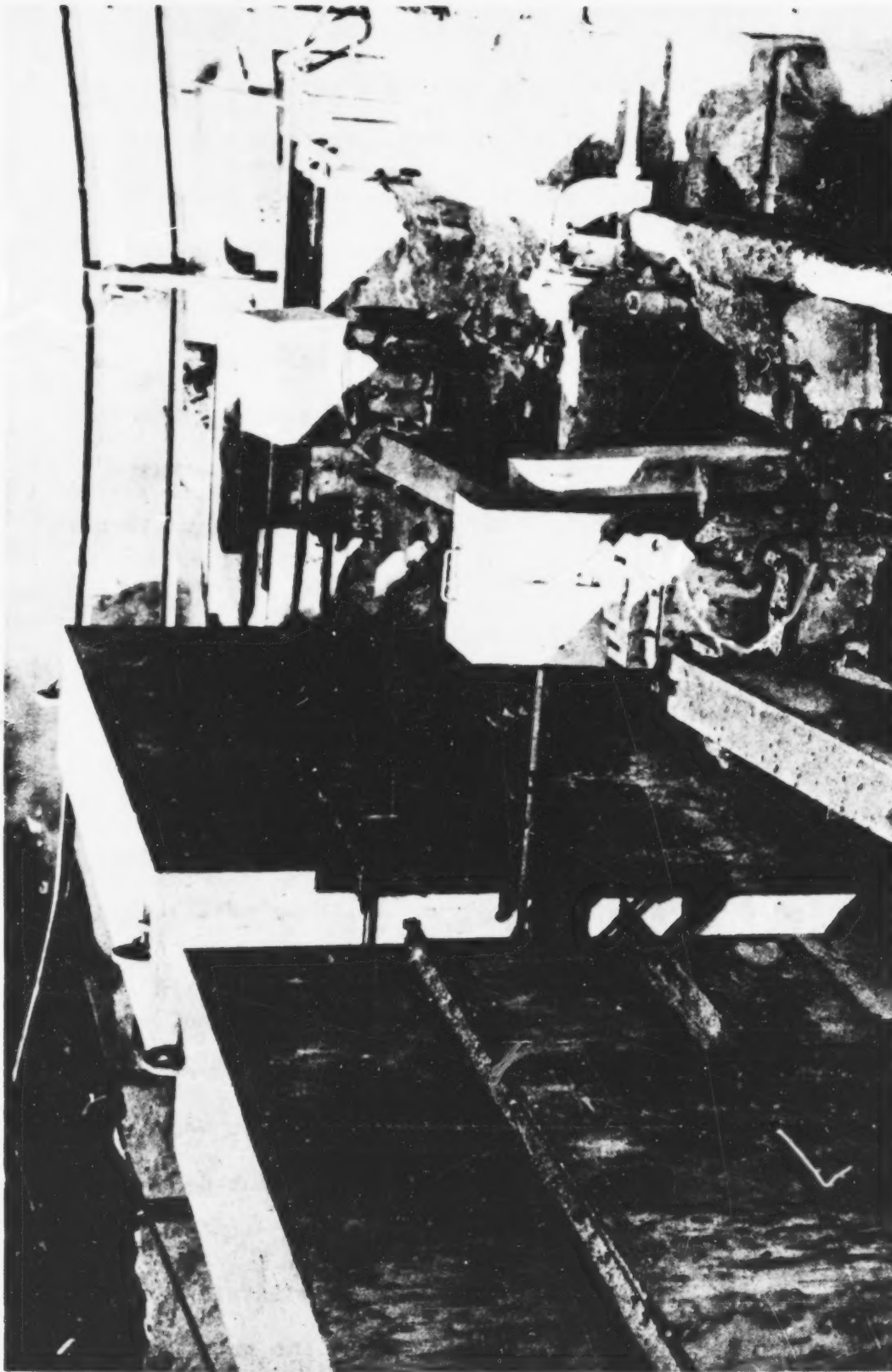


Figure 8: Rotary screens housed in these rectangular boxes trap the slag particles that escape over the weir with the quenching water. Abrasion of the slag particles however, keeps the screen "down for repair" part of the time. Plant engineers are working on this problem and hope to effect a substantial improvement in the efficiency of the screens.

1 of the slag particles severely damage the screens and have
2 kept them down for repairs a minor part of the time. It is
3 during these infrequent periods that the unwanted popcorn
4 slag escapes.

5 Corrective measures are being taken which we are
6 satisfied will bring the popcorn slag problem under control.
7 Let me point out, however, that this discharge isn't toxic or
8 a danger to health although it certainly could be a nuisance
9 and aesthetically objectionable.

10 (Figure 9) Dust laden water from the blast furnace
11 gas cleaner flows to these twin 160 foot diameter clarifiers
12 where the dust settles out in the form of sludge before it
13 can reach the Lake. (See Page 1521)

14 The last two photographs were from U. S. Steel's
15 South Works although they, too, are typical of facilities
16 being used by other steel companies.

17 One steel company has converted over 60 percent of
18 its acid pickling process to cleaning of steel by shot
19 blasting or grit cleaning, thus eliminating this proportion
20 of spent pickle liquor. These installations are typical of
21 new process operations to eliminate or reduce waste dis-
22 charges.

23 Within the past two years, Wisconsin Steel Company,
24 Division of International Harvester Company, has installed
25 and placed in operation a \$600,000 waste treatment and

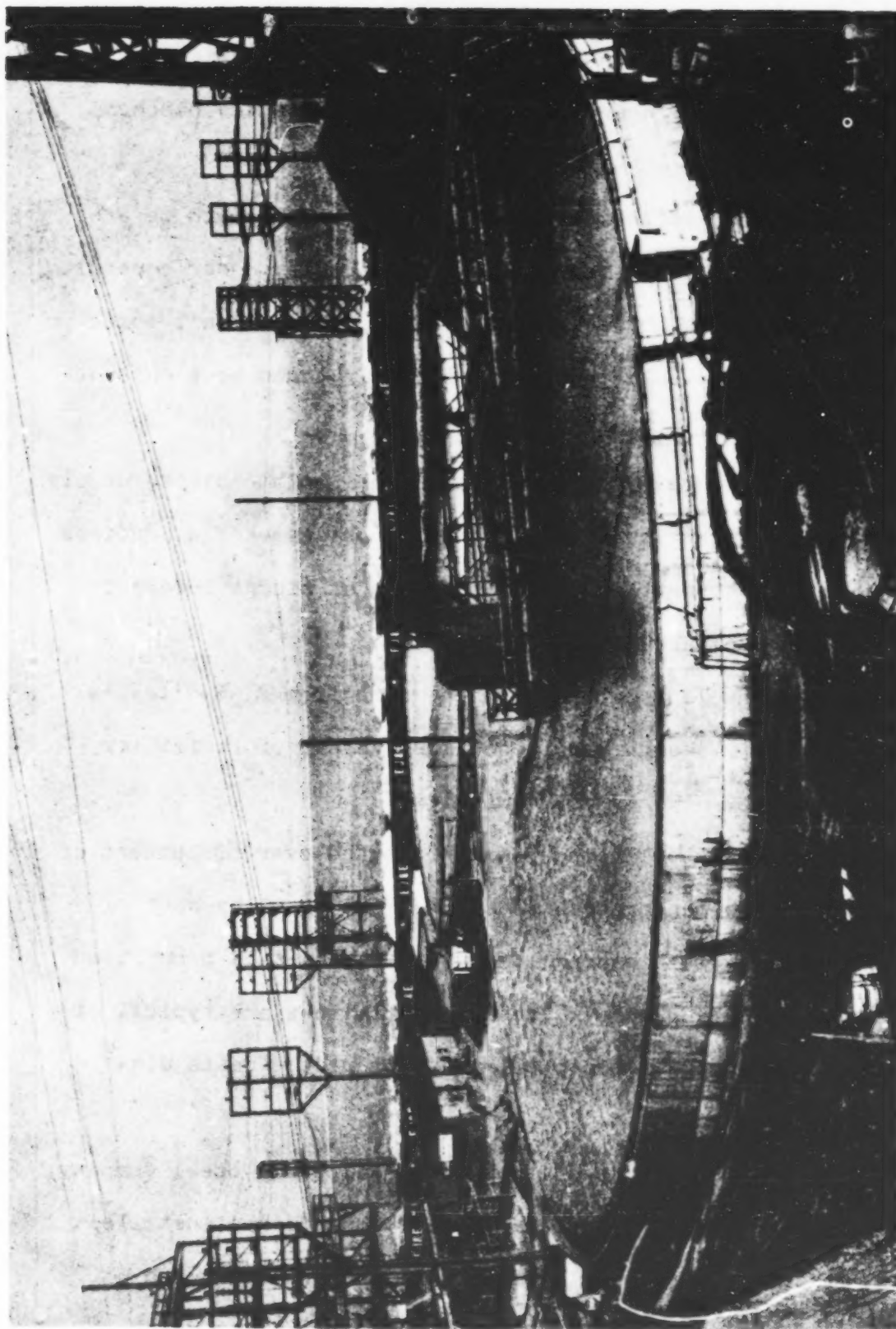


Figure 9: Dust laden water from the blast furnace gas cleaner flows to these twin 160 foot diameter clarifiers where the dust settles out in the form of sludge before it can reach the Lake.

1 recirculation system. This has reduced the volume of wastes
2 discharged, besides improving the over-all quality of the
3 effluent.

4 Republic Steel Company is currently placing a similar
5 system in operation for part of its water usage.

6 Within the last month, a new complex industrial
7 waste plant went into service at Cargill, Inc. This system,
8 costing \$50,000 includes acid neutralization, oil removal and
9 BOD reduction by use of anaerobic-aerobic digestion ponds.

10 Final checks are being made on new waste treatment
11 facilities at Ford Motor Company. The systems costing
12 \$64,000, involve reduction of hexavalent chromium and treat-
13 ment of paint wastes.

14 Acme Steel Company has completed the engineering
15 work on the installation of new sewers to remove all domestic
16 wastes from the waterway. They are currently obtaining con-
17 tractors' bids in the work which is expected to be completed
18 in 1966.

19 United Chemical will install a new \$400,000 process
20 and waste system which will insure maximum effluent quality.

21 Just recently, U.S. Steel Company has made arrange-
22 ments for a joint technical study with the Sanitary District
23 of its waste discharges.

24 In closing this section on industrial wastes, I
25 want to make one point very clear.

1 The Sanitary District, under its basic enabling
2 legislation, and under its Industrial Waste Ordinance, is
3 responsible for regulating and controlling all industrial
4 discharges. This is why we have spoken today on behalf of all
5 the members of the District in this study area. Responsibility
6 for any shortcomings must rest at the feet of the Sanitary
7 District, for we are the ones to call the tune. But, as
8 has been vividly demonstrated, the waste loads reaching the
9 Lake from the District are quite small indeed.

10 Now, let me summarize the position of the Metro-
11 politan Sanitary District of Greater Chicago, as far as this
12 conference is concerned:

13 First of all, Lake Michigan should be kept as clean
14 and free of pollution as possible. To that end, the District
15 welcomes these hearings and records its desire to cooperate
16 in every possible way.

17 Second, the contribution of wastes to Lake Michigan
18 from within the Metropolitan Sanitary District is very small
19 in relation to the total waste load reaching the Lake.

20 Third, the contributions will be further reduced
21 through abatement of industrial discharges and through
22 closing of O'Brien Lock to prevent many of the reversals of
23 the Calumet River.

24 Fourth, within the limits of available resources,
25 the Sanitary District will continue to improve and upgrade

1 the quality of its sewage treatment plant effluents and,
2 thus, the quality of water in the Calumet River and Cal-Sag
3 Channel system including disinfection of plant effluents
4 when water uses so dictate.

5 Contrary to the statement of one witness that no
6 plans have been made to chlorinate the effluent from the
7 Calumet Sewage Treatment Plant, the District's five-year
8 plan includes financing and construction sometime within this
9 period.

10 Fifth, the location of the dam on the Grand Calumet
11 River near Hammond, Indiana, is a question for decision out-
12 side of this conference. It necessarily involves considera-
13 tion of the degree of treatment afforded by the City of
14 Hammond, the degree of treatment afforded industrial wastes,
15 and the anticipated frequency and severity of accidental
16 waste spills.

17 On behalf of the Board of Trustees of the Sanitary
18 District, I wish to thank you for the opportunity to appear
19 before you.

20 CHAIRMAN STEIN: Now, are there any comments or questions
21 from the conferees?

22 Mr. Poole?

23 MR. POOLE: Your figures, Mr. Bacon, on flow reversal
24 estimate an average of 12 percent a year.

25 How do you reconcile those with the report of the

1 Chicago Water Department and the maps that were in back of
2 the Chicago Water Department and I believe were based on their
3 weekly or bi-weekly observations from collected samples?

4 I am looking now at 1959 and 1960, they show 49
5 percent. 1961 shows 46 percent, '62 shows 43 percent, '63,
6 40 percent and '64, 38 percent.

7 MR. BACON: Mr. Poole, we're well aware of this dis-
8 crepancy or deficiency as you call it.

9 In fact, I have had those figures and charts for
10 some time, too, as was reported by the city. Their visual
11 observation is taken from bridges where the samples were made.
12 We believe our figures are considerably more accurate because
13 they are based upon continuous recording gauges.

14 We have observed many times that, depending upon
15 wind conditions and, by the way, the prevailing wind in the
16 summer time is from the south or southwesterly direction, I
17 believe, which certainly would tend to set up an apparent
18 current toward the Lake, while the main current might be
19 the other direction.

20 We maintain this, though, Mr. Poole, whether our
21 figures are 12 percent or theirs of 46 percent, which is
22 three times as great, that really we are still not much in
23 the picture and we intend, as we are saying here, to improve
24 further, but we do believe our figures are accurate at the
25 present time.

1 MR. GERSTEIN: Can I make a comment?

2 CHAIRMAN STEIN: Mr. Gerstein.

3 MR. GERSTEIN: I think the two statements are
4 reconcilable.

5 One represents an entire reversal of the river,
6 the other you could have a temporary reversal of the river
7 near the mouth whereas the rest of the river is going the
8 other direction and these are just observations at the time,
9 and at times the river goes back and forth and may not have
10 much flow either way.

11 But, at the time we collected our samples that
12 was the direction.

13 I think that both statements are correct.

14 MR. POOLE: Where is your gauging station?

15 MR. BACON: Right at the mouth of the river -- where is
16 the precise location, Mr. Brown?

17 MR. BROWN: The north side of the river, right at the --
18 approximately one-half mile from the mouth of the river,
19 right by it.

20 MR. POOLE: Same location where their observations were
21 made.

22 MR. BROWN: Same location where the government gauge is.

23 MR. KLASSEN: As a point of information, I think your
24
25

1 hydraulic engineer probably could help answer this:

2 Is it within the realm of possibility that the
3 surface currents would be in one direction and the main flow
4 of the stream in another direction?

5 MR. BACON: Without a doubt, this can happen.

6 Now, those of us that have -- and I have to
7 immodestly put myself in this category--made a lot of float
8 tests, you use a bottle float, disk float, six foot float, or
9 twenty foot float because you have currents in different
10 directions and any wind will set up a different current.

11 I would like to point out to the conferees that
12 certainly one of the benefits of a conference like this is
13 that you try to put together your data and try to be -- I
14 mean -- point out your position. You realize that some of
15 your methods have not been as sophisticated and refined as
16 they should have been.

17 We certainly want to know more about the direction
18 of the flow in that river beginning very shortly, so, as a
19 part of our control program, we can do a better job of keeping
20 the river flowing in the direction we want it to.

21 CHAIRMAN STEIN: Mr. Bacon, as I understand this, this
22 is for clarification.

23 The gauge you have really is the official one. At
24 one point in the Division of Water Supply and Pollution
25 Control -- as I understood this from the study our Department

1 is doing in the Lake here -- they have found that observations
2 like that may or may not be reliable. What they have
3 developed was sort of a reversed Texas tower, something that
4 goes way down into the water at various levels to pick up
5 the flows.

6 Now, I appreciate Mr. Gerstein's and your
7 statement on that. But if there is a problem here and knowing
8 as much as we do about the difficulty of ascertaining flows
9 in the Lake, I think this is an area that might be very well
10 watched.

11 MR. BACON: We are agreeing with you, Mr. Stein. This
12 is an area that is so controllable quickly there is no reason
13 it should not be done, at least to know what direction the
14 flow is going in.

15 CHAIRMAN STEIN: Yes.

16 MR. KLASSEN: One other point, Mr. Bacon.

17 There has been considerable discussion regarding
18 the closing of the O'Brien Lock.

19 Referring to the map, assuming this O'Brien Lock
20 was closed, I think we have testimony last week that Lever
21 Brothers discharges wastes into Wolf Lake. Would it not be
22 possible with the O'Brien Lock closed, that waste discharged
23 by Lever Brothers into Wolf Lake would find itself into the
24 Calumet River and then out into the Lake?

25 MR. BACON: Yes, they are the same as any of the other

1 nine industries located along that area.

2 I am not intimately familiar with the details of
3 operation, but you must remember that, if the Lake -- this
4 would be when the Lake dropped and when the reversal was
5 uncontrollable, you might be talking about a drop of 6 inches
6 or a foot.

7 So, therefore, you are talking about a quantity of
8 water equal to a depth of about 6 inches or a foot. The
9 whole river isn't flowing out and another thing to keep in
10 mind is that most of the industry -- they first of all pump
11 their water out of the river, putting their wastes back in
12 so you have a circulatory system. It is not as if they are
13 reaching out into the Lake, bringing fresh water in, polluting
14 it, putting it into the river where it would all have to go
15 out.

16 MR. KLASSEN: This is the particular reason I mentioned
17 Lever Brothers -- because, I think they are taking their
18 water from the Lake and putting it into Wolf Lake. Therefore,
19 it would not be recirculated.

20 MR. BACON: That is correct.

21 MR. CHESROW: We are talking about 12 percent, 46
22 percent, regarding the reversal.

23 How serious would it be if our figures were off,
24 say 200 percent?

25 MR. BACON: As I mentioned, there is validity to the

1 type of observation that has been made by the city and ours
2 so, if it were 24 or 36 percent, what I tried to portray
3 here is that, although we are small in the total picture, we
4 believe in this area, as far as the Lake is concerned -- and,
5 that's even that small portion is quite readily controllable
6 if not practically completely controllable, if nature will
7 just cooperate with us a little this coming summer.

8 MR. CHESROW: Thank you.

9 MR. POOLE: I have another question.

10 CHAIRMAN STEIN: Yes.

11 MR. POOLE: Mr. Bacon, on page 8 - you referred to
12 Republic putting in a system for recirculation for part of
13 its water usage. What happens to the rest of it?

14 MR. BACON: Is there a representative here?

15 Do I have the right to call upon the Director
16 of Laboratories or upon a representative of the company?

17 It is a detail beyond me, Mr. Poole.

18 A VOICE: Mr. Chairman --

19 CHAIRMAN STEIN: I am afraid we are going to have to
20 call a halt. If we were to have answers from the people
21 here, this would be fine. The District can call on all the
22 industries to make statements. We have decided not to.

23 As you know, the procedure here is just for the
24 one making the statement and the conferees.

25 MR. BACON: May I then have the permission, Mr. Chairman,

1 of getting the answer and entering it into the record at
2 this point to Mr. Poole.

3 CHAIRMAN STEIN: Yes.

4 MR. BACON: I will do that.

5 MR. POOLE: I have a question or two regarding the
6 Republic Company.

7 I was a little frustrated or disappointed with the
8 Health, Education, and Welfare table. I believe it's VI -
9 VI-a, which indicates no population equivalent from Republic
10 and no ammonia nitrogen and no oil.

11 The latter is the one that bothers me, specifically
12 in that it has been my observation that it is practically im-
13 possible to operate a steel mill without some oil getting
14 away and I think my suspicions were confirmed, as I remember,
15 by one of the photographs that somebody introduced which did
16 show oil in the vicinity of the Republic plant.

17 I wondered if you are in a position to clarify
18 that quandary that I am in?

19 MR. BACON: Well, I mentioned earlier in the statement,
20 in testimony, that we do not necessarily agree with all
21 these figures either.

22 We feel there are some omissions on BOD and
23 oil, but we felt that it was proper since this was the basis
24 of the calling for the conference, to work from Table VI and
25 all its components.

1 That's why we drew upon it, too; but, we feel
2 there are wastes that are not shown here and they are wastes
3 of consequence which we have under surveillance and will have
4 under an abatement program where necessary.

5 MR. POOLE: I was a little concerned also, this goes
6 back to -- maybe I should have asked these during the Health,
7 Education, and Welfare presentation, about pickle liquor
8 from the steel milles, on the Illinois side in that I
9 assumed --- I may be wrong, but I assumed you did not take
10 pickle liquor into the MSD system and I wondered what was
11 happening to all the pickle liquor from the Chicago steel
12 mills.

13 MR. BACON: Mr. Kaplovsky, he is one of our team.

14 MR. KAPLOVSKY: These wastes are neutralized. Like
15 any mill in Indiana, these are passed back into the stream.

16 MR. POOLE: They are neutralized before thay are put
17 back?

18 MR. KAPLOVSKY: Yes, this was pointed out.

19 MR. BACON: May I, on this point, now, this is an
20 important point, in connection with what Mr. Poole is saying
21 in that the Table VIa, the quantities of industrial wastes,
22 whether it is complete in every respect, we note, for
23 instance, the conferees in talking about the Sanitary
24 District, nothing is said about our 95th Street overflow
25 storm water pumping station.

1 MR. POSTON: I am all ready to ask you something about
2 that.

3 MR. BACON: Thank you.

4 MR. POSTON: I didn't want you to feel left out.

5 MR. BACON: I would like to pass this out to the con-
6 ferees (indicating). It is something we have done subsequent
7 to the preparation of the statement, but again, we started
8 out with the Public Health Service figures and made our
9 adjustments thereto, but there is something that should be
10 added into the record here, because you will recall, in
11 Figure 3, we came down to a population equivalent of 22.
12 (See Page 1533)

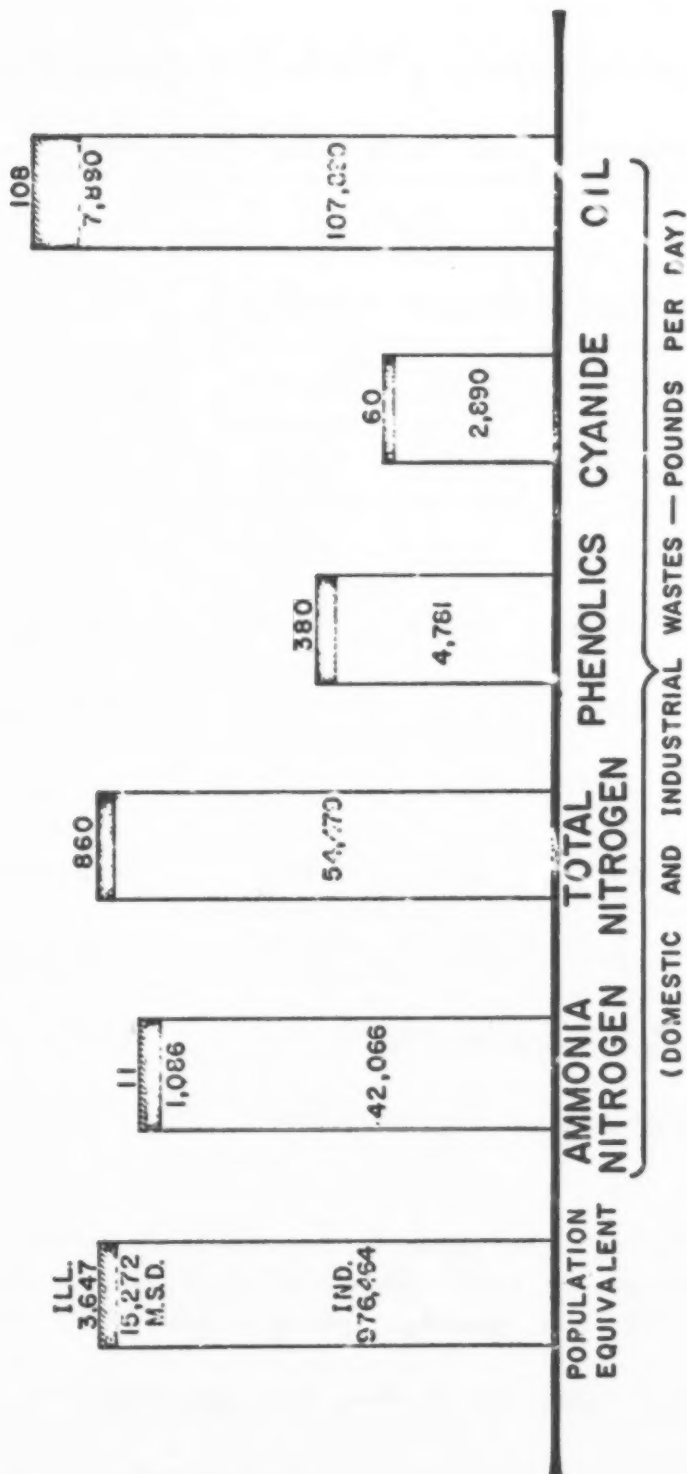
13 Actually, that population equivalent would be --
14 would have been zero, except we were subtracting slide rule
15 quantities and it came out there were 22 left over. Starting
16 with the Public Health Service figures, the subtraction
17 theoretically should have ended up as zero. You know that
18 isn't the case, because we have a 95th Street storm water
19 pumping station.

20 This table has been passed out to you and prepared
21 by our Norval Anderson, and, Mr. Chairman, may this be
22 entered into the record at this point? (See Page 1534)

23 CHAIRMAN STEIN: Yes, without objection, it will be
24 entered.

25 MR. BACON: Storm pumpage from our 95th Street pumping

WASTE LOAD TO LAKE MICHIGAN



NEA
3-4-65

The Metropolitan Sanitary District of Greater Chicago
Storm Pumpage from 95th Street Pumping Station
to Calumet River

Data from Don R. Brown 2/26/65

YEAR	TOTAL HOURS PUMPED	% OF YEAR PUMPED	YEARLY PUMPAGE M.G.	5-Day BOD * TO RIVER LB
1959	100.3	1.1%	740	370,000
1960	36.5	0.4	314	157,000
1961	26.1	0.3	250	125,000
1962	9.7	0.1	81	41,000
1963	47.2	0.5	443	222,000
1964	6.7	0.1	20	10,000

Yearly Average BOD to River = 154,166 lb 5-day BOD

Population Equivalent = 2,530 PE

* On basis of 60 ppm 5-Day BOD in storm discharge
 This compares with Calumet S.T.W. influent of
 91 to 138 ppm yearly average for 1958-1963.

$60 \times 8.34 = 500$ lb 5-day BOD per MG

$$\frac{154,166 \times 6}{365} = 2,530$$

1 station at the Calumet River and you will see, for 6 years,
2 from '59 to '64, we have reported from the records of the
3 District, the total hours pumped in 1959, that pumping station
4 pumping storm water which had mixtures of domestic sewage in
5 it operated 100.3 hours.

6 In 1960, 36.5 hours.

7 In 1961, 26.1 hours.

8 In 1962, 9.7 hours.

9 In 1963, 47.2 hours, and

10 In 1964, 6.7 hours.

11 Those are the hours that the pumping plant operated
12 overflowing into the Calumet River.

13 Now, we have not correlated those pumping hours as
14 to whether the river was flowing toward the Cal-Sag or whether
15 it was flowing lakewards, so this would be a part of the
16 total determination.

17 But, assuming that it all went lakeward, you will
18 notice in the last column the five day BOD to the river in
19 pounds and that's based upon a storm water concentration of--
20 overflow or pumping of 60 parts per million, which is a
21 rather generous allowance for storm water overflow.

22 In other words, it is on the safe or conservative
23 side.

24 When you go to the mathematical computations shown
25 on the sheet, the population equivalent of the 95th Street

1 pumping station is about 2530 persons, if all of it went to the
2 Lake.

3 MR. POOLE: I don't believe, Mr. Bacon, you can average
4 situations like that; that is, where you got a storm water
5 station that operates X number of hours per year and where
6 the experiences here have been that many of the difficulties
7 are periodic in nature and caused by what normally would be
8 a slug effect.

9 MR. BACON: That is correct, Mr. Poole.

10 MR. POOLE: I don't believe you are being quite kosher
11 when you come down to the end, taking the pound as discharged
12 intermittently, whether it be through the storm water pumping
13 station or industries, and dividing that by 365 days.

14 MR. BACON: We recognize --

15 MR. POOLE: As far as the Water Department is concerned,
16 it doesn't work that way.

17 MR. BACON: Well, I think we on this side of the line
18 would agree, it is the slug effect we are worried about.

19 CHAIRMAN STEIN: Mr. Bacon, let's get back to that
20 point.

21 I appreciate these figures from Norval E.
22 Anderson, they probably are going to be very valuable, but
23 how much of this do you want in?

24 How about that stuff in the circle at the bottom
25 in the record?

MR. BACON: I think that is his computation --leave that

1 out.

2 CHAIRMAN STEIN: O.K.

3 MR. BACON: Only those portions necessary to make it
4 clear, sir.

5 CHAIRMAN STEIN: Mr. Bacon, I do think that Mr. Poole
6 has raised a good point. I think for purposes of the
7 record we can make that clear now, because I had that noted
8 for a point to mention later. The same type of thing, it
9 seems to me, might apply on your graphs where you add 88
10 percent and then you average it, then you had a low lake
11 level. The point is that 88 percent doesn't seem to me can
12 be equated with total pounds on a yearly average. Eighty-
13 eight percent refers to 80 percent of the time.

14 Now, assume these figures are correct and, if
15 we take the Water Works' figures, they would be much higher.

16 If we are going to get -- in other words, you
17 are getting the full pollution load if you are assuming
18 that, say, 12 percent of the time -- this is not an average
19 and when we deal with slugs and point of time, let's suppose
20 the full pollution load comes out during the summer when
21 people are using it. This is what we have to worry about.

22 The other point that is closely related to that
23 is the notion that we can assume normal lake levels. The
24 difficulty is that the people on the Great Lakes here, as
25 those living on the shore of any other river or any other

1 body of water, have to live with certain extremes. You
2 just can't assume normal lake levels, nor can we equate if
3 we are getting a slug of pollution a portion of the time
4 that this is always innocuous. The example we often use, let's
5 suppose you get a load of pollution coming into a swimming
6 beach on say the first eleven days in August and not much
7 pollution coming out in December, January or February. If
8 you use your average all year long, you are going to find the
9 pollution is not too bad. But, you have effectively destroyed
10 the use of that beach for swimming. I think, when we talk
11 in terms of time analyses, we should really consider what
12 we have in mind.

13 MR. BACON: Mr. Stein, if you will look at Exhibit 2,
14 you will find although we eventually come to an average,
15 we have given you, by years, by months, the number of hours
16 of reversal under the past conditions. We can also show you
17 with work sheets, as I offered to you, should you want them,
18 it's two hours here, four hours there. We have some reversals
19 on 30 hours duration within the months. All of those figures
20 are available and all of us would grant that it is the
21 slug effect that is the blow that really we are interested
22 in, in practically all instances, but we have told you that
23 blow is not going to be there because, in past years, we
24 did not have O'Brien.

25 Thanks to a cooperative arrangement with the

1 Corps of Engineers, they will close at any time we ask from
2 here on in, and the Lock will be in permanent operation as
3 a navigational facility.

4 I think Colonel Mattina said, beginning in 1965,
5 so we have a protective device here that is operable and
6 operating now and, although the statement I have here and
7 the Colonel said, I think it was, 12 times -- Mr. Brown,
8 how many times have we closed the Lock since the statement
9 was made by Colonel Mattina?

10 MR. BROWN: Three times, I think.

11 MR. POOLE: O'Brien does not give complete protection
12 because there are eight or nine industries there between
13 O'Brien and the Lake.

14 MR. BACON: If you have any long duration of flow
15 toward the Lake, then you will be peeling off of that top
16 and any industry pumping into it directly from the Lake
17 will have to spill in that direction, yes, sir.

18 MR. POOLE: I will yield to my colleague.

19 CHAIRMAN STEIN: I want to correct the record here.

20 I don't have any doubt of what has been said,
21 but on the question of the O'Brien Lock, as I recall Colonel
22 Mattina's statement, we did not have any definite statement
23 from him.

24 I wonder if this would be used for navigation
25 because he talked in terms of it not being necessarily

1 effective for navigation as long as you have the limitation
2 of the Blue Island Lock and Colonel Mattina, as far as I
3 understood his statement, very carefully did not indicate
4 when this would be in full navigational operation.

5 The second point I have to make, I appreciate
6 this point of Colonel Mattina because we have the same one
7 in our establishment, possibly you do, too.

8 He was careful to indicate that he wasn't
9 sure, as much as he would love to cooperate and do this, that
10 he was fully staffed up to run that Lock for water quality
11 control purposes and I think, as I understood and I am
12 just trying to get this in place in the record.

13 MR. BACON: He stated, if I remember correctly, and we
14 can check this in the record, that there are staff to
15 operate it as a pollution control facility at our request,
16 but they are not staffed to operate it as a navigational
17 facility.

18 Now, there is something else that is extremely
19 important and I don't want to see this O'Brien Lock minimized
20 as a pollution control facility, because it is true, as has
21 been brought out here, that we have nine some industries on
22 the lake side of O'Brien Lock which continue to discharge
23 when the Lock is closed.

24 But, from a bacterial point of view, the pro-
25 tection should be quite complete because our treatment plant

1 at Calumet, which does not chlorinate is located --

2 MR. POOLE: But, the 95th --

3 MR. BACON: On the storm flow pumping station.

4 Now, again, we pointed out the number of hours
5 and the quantity of flow for the 95th Street pumping station.

6 One thing else that should be entered into the
7 record is that in the long-range program and not so long-
8 range either -- probably within a two or three year period or
9 four at the most -- the 95th Street Pumping Station will be
10 abandoned, with the construction of the Southeast Pumping
11 Plant which would be located adjacent to O'Brien Lock and
12 which will discharge either side of O'Brien Lock. So in that
13 case, most of the time, I would imagine, except severe storms,
14 when the whole works has to be opened up, that the discharge
15 would be on the landward side of O'Brien Lock to 95th Street,
16 although sometime in the picture it is destined, and the
17 design and plans are to replace it with the 95th Street --
18 excuse me, with a Southeast Pumping Plant within a few years.

19 MR. POOLE: I have one other question about Cargill sewage.

20 As I remember the Health, Education, and
21 Welfare Report indicated they had a septic tank and I was
22 sort of intrigued when, by those computations of those you
23 got down to an ultimate population equivalent of 22.

24 It is pretty good, I think from a computing
25 standpoint I wondered what is happening to the Cargill sewage.

1 You mentioned they have put their industrial waste plant into
2 service, does it take care of the sewage, also?

3 MR. BACON: Dr. Kaplovsky, do you have that answer
4 ready?

5 MR. KAPLOVSKY: This Cargill plant reported as having
6 8500 population equivalent, as I recall our examination,
7 showed that on the closer, it was composites that had about
8 12,000 population equivalent and this plant had been
9 completed and put into operation and it has an aerobic and
10 an anaerobic system as you indicate in here.

11 Now, this is to the best of my knowledge and
12 includes total waste load.

13 MR. POOLE: That takes the sewage also going to the
14 septic tank?

15 DR. KAPLOVSKY: At the moment, this is the best of
16 my knowledge.

17 MR. BACON: Well, we will make a check with the Chair-
18 man's permission and enter it into the record, if that's
19 not correct.

20 DR. KAPLOVSKY: I might point out the total employees
21 at this plant is 150 and it is not very large.

22 MR. POOLE: Still, 6 x 22 isn't it?

23 MR. BACON: You understand, Mr. Poole, you are under-
24 scoring a point we wanted to make. We started with the PHS
25 figures and if the figure, the initial figure didn't have
anything in it, and we know everything isn't in there,

1 then you are going to end up in some cases by the process
2 of elimination, if they didn't have any BOD in the location
3 to begin with, you will end up with a zero.

4 This is not in criticism of those figures,
5 because we feel we are in the same ball park, and by a very
6 comfortable margin.

7 MR. POSTON: What water quality criteria do you have for
8 the area of your jurisdiction or what goals?

9 What do you try to attain in terms of water
10 quality?

11 MR. BACON: You must remember that the North Shore
12 Channel of the Sanitary and Ship Canal and Cal-Sag were built
13 not at that time as recreation and water waste or sources
14 of drinking water, they were built as a part of a drainage
15 system.

16 At one time they depended solely upon dilution
17 for treatment process, meaning they received raw wastes
18 under the 1930 Decree of the Supreme Court, by dilution
19 water was cut down to the extent we had to have built and
20 operate three secondary type treatment plants, based on the
21 activated sludge process.

22 So, our standard at the present time within
23 the District's secondary treatment equipment to the activated
24 sludge process for not only our three plants but for all of
25 the -- we have also I think nine or ten smaller plants,

1 then we have supervision or jurisdiction over seventy some
2 institutional sewage treatment plants. We require of all
3 other plants chlorination in addition to the secondary
4 treatment.

5 So, our standard at the present time -- I,
6 without relating it to receiving water, Mr. Poston, would be
7 secondary treatment, some with chlorination, some without.

8 MR. POSTON: Then you would expect all industries within
9 this area to provide equivalent facilities?

10 MR. BACON: This is our ultimate goal, because we were
11 treating all discharges alike. In due time, we would expect
12 all of them to get to the same level of treatment.

13 If they cannot tie into our system, to which
14 of course we would provide the treatment.

15 MR. POSTON: Do you have a particular requirement for
16 beaches that you would want to protect? What kind of
17 quality -- I am thinking about Calumet Park Beach.

18 MR. BACON: Mr. Poston, our goal is to keep the wastes
19 away from the beach and the two locations we have had our
20 last diversion into or bypassing into Lake Michigan in 1961,
21 at the North Shore Channel at Wilmette, at the Chicago
22 River Locks.

23 As we pointed out, here we regularly have
24 these reversals at the Calumet River, but our goal is, as
25 we are stating here, to keep the pollution away from

1 Lake Michigan.

2 MR. POSTON: I am a little confused by the way we --

3 MR. BACON: We wouldn't set the bacteria standard, I
4 say, we probably look to others for help on that health
5 matter.

6 MR. POSTON: In view of all of this closing and talk of
7 closing of Calumet Park Beach, I wondered whether or not you
8 had looked into any and were aware there were high coliform
9 counts in that area?

10 MR. BACON: Yes, I heard this testimony and very
11 dramatic and spectacular testimony. It brought home the
12 point very well, and this, of course, is one of the things
13 that is stimulating us to do what we are doing not only in
14 trying to keep our Calumet effluent out of that area and I
15 might add, I don't know what we are going to do about 95th
16 Street in the meantime, meaning obsolescence and abandonment.

17 Certainly, if worse comes to worse, we, like
18 all others that operate combined sewerage systems are tying
19 in systems of storm water overflow treatment.

20 In fact, we are getting quite anxious to get
21 some money from you for that.

22 MR. POSTON: I am -- when you talk in your recommendation
23 No. 5 that the location of the dam on Calumet River as being
24 outside of the jurisdiction of this conference, when Hammond,
25 which is a town of some 140,000 people, 147,000 people with

1 discharge of some 30 million pounds of sewage a day, treated
2 sewage, and normally this sewage goes directly west, would
3 you point that out?

4 MR. BACON: Right, at that divide line.

5 MR. POSTON: That normally flows west.

6 Now, the plan is to make that flow to the east
7 and this would put treated sewage back into Lake Michigan and
8 this is difficult for me to understand.

9 MR. BACON: Well, now, we have to be real careful and
10 patient here because you are asking us to take one block of
11 sewage from Indiana, and, if we say one is all right, then
12 we could say more is all right and then, eventually, and
13 we all know that hydraulically, this is possible, all of
14 those wastes could come through our system and this is
15 something that we believe it is under someone else's
16 jurisdiction and it should be completely handled by that
17 other jurisdiction.

18 As I pointed out, and maybe you didn't read
19 between the lines, when you talk about bringing more sewage
20 into the Sanitary District's system, if you are talking
21 rationally as we do, you are then talking about do we need
22 any more or any additional diversion water and the Sanitary
23 District is not asking in its present case for any additional
24 diversion water.

25 We will rest our case with what we have, what

1 we can do in improving our system.

2 This question you are raising about Hammond,
3 it impinges exactly upon that case.

4 I would like to add one other thing, our
5 waterway control engineer, upon whom I rely and do rely, says
6 that the bulk of the flow, the vast bulk of the flow is not
7 westerly now, but in an easterly direction from that Hammond
8 discharge. Incidentally, it really is a local decision
9 among Indiana, Illinois, the Sanitary District, if we can
10 make a working arrangement with Hammond to put the dam so
11 that its waste comes through our system. That is why we say
12 this is our decision.

13 If we don't take it in our channel system,
14 maybe Hammond will have to go to treatment with chlorination
15 which is technically and economically feasible. So, they
16 are not being deprived of anything and I think we are, Mr.
17 Poston. I must have this record clear, completely consistent
18 in this position that is expressed here and it is completely
19 consistent with our lake diversion testimony and position.

20 MR. POSTON: It was brought out by Indiana people that
21 normally, under normal lake levels, the flow was from the
22 east to the west. The normal direction of the flow today,
23 during normal lake levels -- I agree that the level of the
24 lake which is very low now might have a tendency to let the
25 flow go in this other direction.

1 MR. BACON: That little dam at Hammond will be sure
2 to make it go easterly.

3 I should add that the predictions and, with
4 your permission, Mr. Chairman, I would like - and I think
5 it would not only be of value, but of interest - to ask Mr.
6 Brown to make a statement of what the anticipated lake levels
7 are.

8 CHAIRMAN STEIN: You made the point. I didn't know this
9 was a straw man, but if you think your point is a valid one.
10 We don't have jurisdiction over that dam location.

11 I don't know whoever said we did, or whether
12 you think we have jurisdiction or not, but we are sure not
13 going to solve it.

14 I know you engineers love to talk about dams
15 until the cows come home. But I suggest we might try to
16 get on, because if we get into a discussion --

17 MR. BACON: You are right, sir.

18 CHAIRMAN STEIN: I don't know.

19 MR. BACON: There is no place here we feel --

20 CHAIRMAN STEIN: Again, for the purpose of the record,
21 I think on that 65 days you talked about, the Thomas O'Brien
22 Lock -- I have Colonel Mattina's statement, he says as
23 expected that the barrier dam, and I am not making any
24 guesses as to locations, can be completed in fiscal year
25 1966. This means a normal calendar year, talking 1967,

1 possibly in setting up in any future estimate for dams, this
2 is an optimistic estimate and may be ahead. But, according
3 to Colonel Mattina, he indicated that the construction of
4 this would have to come first. This will permit removal of
5 the Blue Island Lock and the operation of the Thomas J.
6 O'Brien Lock and controlling works or full navigation --

7 MR. BACON: Understand, we are not talking about naviga-
8 tion. We don't care. We are talking about pollution control.

9 CHAIRMAN STEIN: I know that.

10 MR. POSTON: I think Colonel Chesrow pointed out one
11 of the goals of the Sanitary District is to keep the waters
12 as clean and pure as possible, and protect the health of the
13 people.

14 I am sure that the District will do what is
15 required to keep this water that way.

16 MR. BACON: I think the record of the District in its
17 total operation -- we are not talking about --

18 CHAIRMAN STEIN: Looking at Colonel Mattina's statement,
19 he also pointed out that permits were issued by the Depart-
20 ment of the Army to certain steel companies, permitting
21 discharge and disposition of flue dust and industrial solids
22 in the Calumet River and requiring payment of an annual
23 amount of \$25,000 for its removal.

24 This payment is to be reduced as the companies
25 decrease the deposit of solids into navigable waters and you

1 outlined the industrial waste on this in your program of --
2 you convinced the Corps of Engineers you decreased it, so that
3 they decreased the rate.

4 MR. BACON: Mr. Stein, you are a counsellor and I am not.
5 I only know that in my experience in water pollution control
6 administration the local body can have an overriding or a
7 more stringent or more demanding requirement than some other
8 element of government and the more demanding one controls.

9 I believe, although we haven't progressed this
10 far, if we need to make a more severe demand on the industry
11 for some removal that we have the right to do it under our
12 Industrial Waste Ordinance.

13 CHAIRMAN STEIN: I fully agree with you.

14 MR. BACON: I don't think they can give them a license
15 to pollute if we have control and responsibility of all
16 surface and underground waters. I agree that something
17 additional has to be done.

18 CHAIRMAN STEIN: That wasn't the thrust of the question.

19 MR. BACON: I am sorry.

20 CHAIRMAN STEIN: The point was that, based on the
21 waste they are putting in, the Corps was demanding \$25,000
22 a year.

23 Now, if we had a program of waste reduction,
24 presumably the Corps is ready to cut that rate from \$25,000
25 a year to something else.

1 But, the point is, you are going to have to
2 show the Corps of Engineers you are putting less of this
3 material in the river.

4 MR. BACON: I don't know the answer to that question, sir.

5 CHAIRMAN STEIN: Thank you.

6 Are there any other questions?

7 MR. KLASSEN: Purely to make the record as complete as
8 possible, last week the idea was advanced by, I believe,
9 one of the Indiana industries of taking the wastes from
10 Indiana and, with sufficient diversion, flush them down
11 through Illinois.

12 Also, I believe it is a matter of record that
13 the Sanitary District feels that dilution, diversion of
14 some Lake waters, is essential to the operation of your
15 system and purely to afford you an opportunity to express a
16 view, Mr. Bacon, and because we recognize your competency
17 in this area, do you desire to put into the record any
18 opinion as to your feeling whether or not the Indiana situation
19 can be resolved with a similar or increased diversion.

20 MR. BACON: Well, if the proper authorities set the
21 quality of water needed in Lake Michigan, which quality
22 cannot be exceeded, I mean, I think we have known technical
23 and economically feasible methods and I think, if they are
24 given water quality goals to be met, as any municipality,
25 they can be met.

1 I would say that if they were to go in
2 another direction in some diversion system of theirs that
3 they would have to solve the problem, then have a combination
4 of the degree of treatment and any dilution water available.
5 But, I want to make it very, very clear as far as the Sanitary
6 District is concerned, our position is that we have Lake
7 diversion cases, we have a system that is operating here, we
8 are not asking for more diversion water. We think we have
9 the proper amounts and probably the minimum amount, and this
10 is our case.

11 We would not want to mix, under any circum-
12 stances, a question of wastes coming through our system and
13 would dilution or diversion water be necessary.

14 MR. KLASSEN: Thank you. I have one other point, Mr.
15 Chairman.

16 Last week there was testimony, I believe by
17 the Superintendent of Sewage Treatment Plant at Gary, that
18 as late as 1960, Gary had been building combined sewers and
19 the city engineer at Hammond, on the other hand, testified
20 that progressively they were supplementing their combined
21 sewer system with separate systems.

22 I wondered if you would care to put into the
23 record the policy of the Sanitary District on this question
24 of expansion of the sewer system to combined or separate
25 plan?

1 MR. BACON: Well, as it pertains to the Calumet Region
2 area under study, our policy has been and, although we are
3 looking toward making it more definitive and sharpening up
4 on it in the near future, we hope not to allow the extension
5 of a combined sewerage system.

6 In other words, to effect separation as quickly
7 as possible. But, I think we feel that where a community
8 is basically built up on a combined system, it is practically
9 impossible and not economical to make the separation just
10 by going out and saying, "Tomorrow we separate. We get the
11 money and go at it."

12 We feel that the way to separate those sewers
13 is to take advantage of every renewal project, every improve-
14 ment.

15 We are advocating that if you are in a
16 combined sewer area and a large subdivision goes in, that
17 it develop on a separate system of the sanitary sewer and the
18 storm sewer, even if those two pipes connect into a combined
19 sewer, because you have at least effected that kind of
20 separation. Later on, when that bigger pipe, the one taking
21 the two is rebuilt or enlarged, you can affect the further
22 separation.

23 But, it is one of those things that in a built-
24 up area, it is almost impossible, we feel, and uneconomical
25 and impossible by virtue of traffic and everything else to go

1 in and convert a system.

2 But, certainly, we feel you should have a
3 policy of not allowing the extension of combined sewerage
4 systems. You should affect the separation every chance you
5 get.

6 CHAIRMAN STEIN: Do you, in fact, do that? When they
7 rip up a street or something of that kind, do you do that
8 if you can?

9 MR. BACON: Mr. Stein, we are just at the present time,
10 the Board is working on this matter of what to do, how
11 stringent to be in the combined, versus the separation
12 program.

13 Let me say --

14 CHAIRMAN STEIN: Yes?

15 MR. BACON: I see you raising your finger.

16 CHAIRMAN STEIN: I realize how difficult this is.

17 MR. BACON: Here is what you are up against: An area
18 on a combined sewerage system, a developer comes in and
19 logically want to keep the costs down. Since he is close to
20 a combined system, it is mighty hard to convince him he ought
21 to put in two pipes, because it is going to cost a lot more
22 money.

23 We have a highly developed area where they are
24 going to start putting in sewers and the argument will be,
25 Everything else is combined, why can't we put in another

1 300 acres on a combined system?"

2 This is a policy decision that the Board must
3 make. We are operating what we think is the general prin-
4 ciple of the State Water Board, although it is outside of
5 their jurisdiction, where we do not allow the continuation
6 of combined sewer installation.

7 CHAIRMAN STEIN: I recognize that, Mr. Bacon, and I
8 recognize how difficult the problem is.

9 However, I know we have had with a program
10 like this perhaps as much experience in Washington, D.C.
11 under Dave Ault as anybody.

12 What he is trying to do is every time a street
13 gets ripped up for paving or something of that sort, to see
14 if he can come in there with a separation program, absolutely
15 not permitting any new building without this.

16 However, even under those circumstances, it is
17 estimated that it is going to take 100 years for them to
18 complete it. I think this is one of the most difficult
19 problems in combined sewers we have in the older major
20 cities, because in order to do the job all at once, if it
21 could be done -- and I guess if you give these engineers enough
22 money, they can do most anything ---you rip the city up so
23 you would have to close it to all automobile and truck
24 traffic for the next 15 years and the cure would be worse
25 than the disease.

1 But, unless we get some kind of dramatic re-
2 search breakthrough on treating these wastes from combined
3 sewers we won't make much progress. There really has to be
4 some program instituted.

5 Now, I should say you have our full sympathy
6 and our full support in anything you possibly can do on this.

7 MR. KLASSEN: Fine, I hope you will not leave any
8 impression in this area of the country that it is going to
9 take 100 years before the pollution of the Potomac is
10 cleaned up.

11 We had hoped that the Nations Capitol would
12 embark on a program to do this much sooner.

13 CHAIRMAN STEIN: We are going to have that pollution
14 cleaned up in the Potomac by 1966. If you would adopt the
15 same time schedule for Lake Michigan, I think we could
16 adjourn right now.

17 MR. BACON: I would like to say another word about
18 these combined sewers.

19 We certainly know that what you say is true.
20 It is impossible within a hundred years. It is estimated --
21 and the figure was entered into the Lake Diversion testimony
22 for the City of Chicago -- to separate sewers it would cost
23 \$2,200,000,000 and it would take many, many years.

24 There are other things that might be done. The
25 certain key points anyway in an overflow system we might try

1 a short time or shock treatment of some kind, chlorination
2 for 15 or 20 minute settling or something - some such method
3 might be used. We have a few critical points in our system,
4 some in this area, I believe, where this might be done.

5 So, we certainly are looking forward to that
6 type of storm water overflow treatment program in the near
7 future, at least in a few spots. I do not want to bring
8 flood control systems into this, but actually in our area,
9 the question of stormwater combined sewers could be solved
10 if we can get a storage project that we have in mind under
11 way here.

12 It is in the very far-out realm now, but
13 nevertheless, we know that we have a plan that would work
14 if we could afford it.

15 CHAIRMAN STEIN: I recognize that.

16 By the way, Mr. Klassen, there is being finished
17 in Washington now a \$75,000,000 interceptor sewer to handle
18 the stormwater problem and this is more expensive than the
19 plant. We had to put that right along the banks of the
20 Potomac River -- from Haynes Point and the Blue Plains Plant
21 up to Chain Bridge ---if you are familiar with the area.
22 This was laying sewer and digging up some of the most
23 beautiful land in the District then covering it up again,
24 just to handle the stormwater problem.

25 I think, as Mr. Bacon points out, we are faced

1 with the dereliction and the science of a century. In order
2 to handle that, we need heroic efforts and a lot of money.
3 This is a problem that is so hard to solve, I think, that
4 it is one that we are all going to have to work on very
5 closely together.

6 MR. POSTON: I see you are doing construction at the
7 Calumet Sewage Treatment Plant.

8 What are your policies relative to by-passing
9 during this construction period?

10 Are units of the plant taken out of operation?
11 This is always a problem in smaller plants.

12 How do you handle it?

13 MR. BACON: We don't have to, because, you see, you are
14 talking about the photograph you showed the other day, showing
15 the condition of aerating Battery No. C. We have A and B
16 running. They run all the time. I don't know if we would
17 have a matter of a few hours of cutting over or if so, we
18 ordinarily would make those connections without any loss of --
19 we don't ordinarily have that as a problem, Mr. Poston.

20 You see, we got multi-plants already.

21 MR. POSTON: I would like to ask further about the
22 individual effluent data.

23 I noticed that you didn't give this on specific
24 industries. Would you be willing to give it to the Public
25 Health Service, the information on individual effluents from

1 industries relative to the amounts of waste?

2 MR. BACON: Well, we will not give out any information
3 that has been given to us. If it has been given to us in
4 confidence or with the understanding that it not be released,
5 we will refer you back to the parties concerned.

6 I think -- may I comment on this a little
7 further?

8 CHAIRMAN STEIN: Go right ahead.

9 MR. BACON: I think you are making a mountain out of a
10 mole hill on this matter of release of data.

11 I think we are all working toward the same goal
12 and we are playing the game fairly and we are not embarrassing
13 one another, I have never found a problem getting industry
14 data.

15 I know what happened here a few days ago. I
16 think we got everything we need. Furthermore, what we don't
17 need, we can go out and pick up in the waterway ourselves if
18 we want to.

19 I mean, after all, we know what's in the water-
20 way. I feel -- and I hope to leave the impression in the
21 Sanitary District and with our dischargers -- we are one of
22 the co-conferees here; we can work out this problem as to
23 what we need to work with and what data they give us or
24 what they withhold. But, certainly, to answer your question,
25 we will not release data other than our own without the

1 permission of those furnishing it.

2 I say, I don't think there is any quarrel, as
3 I indicated --

4 CHAIRMAN STEIN: I would like to agree in large part to
5 what you said. As you know, we both have been working in
6 this field for many, many years. We have had these enforce-
7 ment conferences involving more than 700 industries. Until
8 the last few, and I wouldn't say this is all the steel mills,
9 but until we ran into a few of the steel companies, we never
10 had this problem either.

11 Now, as I understand this, our industrial
12 waste expert, who is here now, Mr. Hayse Black, says we
13 need the data and he needs it for his evaluation. As I
14 understood Perry Miller of Indiana, he indicated he needed
15 the data.

16 I can see no way -- I have no -- all I am
17 interested in is getting water clean enough for a maximum
18 number of possible uses and taking into account all legitim--
19 ate uses. But if the best engineering people we have in the
20 Public Health Service, state, local or Federal, and as you
21 probably do feel you need the data, I think if this is a
22 prerequisite for our technical staff, then we have to make
23 provision to get it.

24 MR. BACON: I think we need the data. I don't think we
25 have had any problem. Sometimes we have to arrange taking a

1 sampling and testing probe a great deal in order to satisfy
2 the wishes of industry. But we are not wanting for control
3 data and I hasten to point out that, if we are talking about
4 one thing we want to protect, namely; the receiving water
5 when it comes down to the final analysis, we wouldn't care
6 how they treat their waste deposit -- from tea cup to tea
7 cup -- as long as they maintain the conditions.

8 CHAIRMAN STEIN: You are interested in the effluent?

9 MR. BACON: We want effluent data because we can help
10 an industry in its design when it comes down to it. If we
11 are talking about what we are trying to protect, the
12 receiving waters, we would set our standard on that basis.

13 CHAIRMAN STEIN: We can set it on both bases.

14 The point is, from a Federal point of view,
15 you know there is a difference of opinion among the states.
16 Some like effluent standards, some like stream standards or
17 criteria. Some like a combination of the two.

18 From the point of view of the Federal program,
19 this is the question of local option as long as it protects
20 the water uses.

21 We don't particularly care. But our technical
22 people indicate to us that in order to carry this out this
23 is a matter of public waters and should be a matter of public
24 information. I know in the operation of our program on a
25 National level, since these are our objectives, we have no

1 basis for getting any information on a confidential basis.

2 We have no use for it.

3 MR. BACON: You know, there is one point you haven't
4 made here, that probably is the greatest argument.

5 I will take your side for a moment.

6 For having effluent knowledge, data on
7 effluents, that is where your effluents overlap. For
8 regulatory purposes, you very often have to know who is
9 contributing what, because after they get mixed up in the
10 receiving water, it is pretty tough to hold one company
11 responsible for one discharge or one municipality responsible
12 after the wastes are co-mingled, which very often happens.

13 But, again, I think we are talking about two
14 different methods of water pollution control either on the
15 receiving water or the effluents and we will use both, of
16 course.

17 CHAIRMAN STEIN: I don't think that's been overlooked,
18 Mr. Bacon.

19 I think we both agree this is our prime concern.
20 You see, the problem that we have here is, if an industry
21 says it is doing a good job and it isn't contributing to
22 pollution and doesn't put out the data, our job is not only
23 to find the damage at the point of use, but we have to pin-
24 point the source.

25 In community after community, and I wouldn't

1 say the presentation here has been very much different,
2 collectively, we know or everyone can see perhaps through
3 the back door, that we just might have a little problem.
4 Yet, everyone of the potential or alleged waste dischargers
5 gets up and says it must be some one else, not us. "We are
6 providing wonderful treatment."

7 Of course, they don't tell you what they are
8 putting out, they tell you what they have done in construction.

9 MR. BACON: Mr. Stein, rest assured you can have all
10 of the data we have that belongs to us and we have lots of it.

11 MR. KLASSEN: Mr. Chairman, I was in the midst of this
12 the other day. I would just like to comment on this point.

13 So far as the Illinois Sanitary Water Board is
14 concerned, this has never been a problem with industry. We
15 get the information and work with them.

16 You mentioned Mr. Black. Mr. Black was trained
17 in Illinois and I don't believe that he ever had this
18 difficulty.

19 I do want to offer, however, to industries a
20 practical suggestion that has been our experience.

21 I know the argument is raised and sometimes
22 validly that, by disclosing the material or the amounts of
23 the material in an effluent, their competitors might get
24 information concerning production and products that might
25 be detrimental to their own industry.

1 I will offer to the industry a real solution
2 to this. If you remove from your effluent all the material,
3 then there is no way that your competitor could ever find
4 out what your product is.

5 CHAIRMAN STEIN: Are there any other further comments or
6 questions?

7 (No response.)

8 If not, thank you very much, Mr. Bacon, for an
9 excellent presentation.

10 MR. BACON: Thank you for the opportunity to be with you.

11 MR. CHESROW: Mr. Chairman, in closing, I would like to
12 point out that our deliberations of the last few days
13 concerning the pollution of the Southern basin of Lake
14 Michigan have offered a penetrating picture of the abuse
15 of one of man's most precious possessions; namely, what might
16 well be a limitless source of fresh water. These same
17 deliberations have conclusively revealed that man is bent
18 on dissipating this God-given treasure and that unless we
19 take drastic action, the lake waters and beaches will be
20 lost to us forever.

21 We have learned that the people of Indiana,
22 as well as those inhabitants of Illinois, are equally
23 concerned over the future of this great body of water; that
24 officials representing these people are determined to put
25 an end to this desecration of one of nature's proudest

1 possessions, and the inhuman obliteration by the poisoning
2 of our waterfowl, fish and plant life.

3 Now, first, let us consider who or what is
4 responsible for this outrage that is proving so costly to
5 us.

6 Let me say at the outset that The Metropolitan
7 Sanitary District of Greater Chicago has been fighting
8 pollution of Lake Michigan for three-quarters of a century
9 and has pioneered many engineering feats ... resulting in
10 many major victories in the war against contamination. We
11 have made outstanding progress up to the existing limits of
12 the science of Sanitary Engineering, but, even this leaves
13 much to be desired .. and is still not sufficient.

14 The cities and towns bordering on the lake
15 are not doing a good job ! State agencies are unable to cope
16 satisfactorily with the issues because of the interstate
17 problems involved, much as these agencies would want to meet
18 their responsibilities.

19 It has been pointed out in this conference that
20 among the offenders are many large and distinguished industries
21 that have contributed much to the development and welfare of
22 this great area. I am confident that their officials and
23 directors are men of understanding and good will, and will
24 want to do as many have already done, join with us in meeting
25 our responsibility to our neighbors and to the generations

1 to come. Working together as a team, without recrimination
2 and petty bickering, we can assure the residents of Illinois
3 and Indiana a plentiful supply of pure water to which they
4 are entitled.

5 The HEW and the supporting data from the
6 USPHS and the other agencies is a conscientious approach,
7 long awaited. It recognizes the population and industrial
8 factors and the complexity of the situation. It recognizes
9 also that the waters in question know no boundaries.

10 This conference has very pointedly borne out
11 that the facts here are very real and very dangerous and that
12 we are on the very brink of destroying our lake forever.

13 If we are to protect Lake Michigan, this God-
14 given resource, which is ours to enjoy and not destroy,
15 immediate steps must be taken to achieve this end, and so I
16 would ask:

17 (1) That the Federal Government which called
18 this conference following a four year study, immediately take
19 action to enforce compliance with antipollution controls
20 under authority granted to the Department of HEW by Congress.

21 (2) That the HEW "recommendations for
22 corrective action needed" to be acted upon before adjourn-
23 ment. The residents of this area have already waited too
24 long .. they are tired of surveys, studies and conferences
25 and want action now .. not after all our waterfowl, fish,

1 plant life, beaches and, most important of all, the source
2 of our drinking water are lost to us forever.

3 (3) In addition to the HEW recommendations,
4 we should recognize that uniform standards setting up
5 maximum limits of pollution are needed and must be established
6 by Federal authority, including regulatory controls of sewage
7 treatment plants to curtail the discharge of untreated
8 sewage into Lake Michigan and our waterways.

9 (4) We realize that with all the means at our
10 command, complete treatment is still insufficient, we have
11 every right to expect the highest degree of secondary treat-
12 ment of sewage, measuring up to such standards as the
13 Federal Government may set forth for both private industry
14 and public agencies.

15 We have no other choice at this time. We
16 must obtain action now and we must obtain it through Federal
17 channels by enforcement through the Department of Health,
18 Education, and Welfare. The HEW recommendation that, "all
19 waste be disinfected before discharge," is personally a
20 welcome one, because it substantiates a second recommendation
21 made by me in a paper to the Board of Trustees of the
22 Metropolitan Sanitary District of Greater Chicago in 1952. The
23 first was on the need for an Industrial Waste Ordinance which
24 I was glad to sign, as President, ten (10) years later, in
25 July of 1962.

1 President Johnson recently asked us all, "to
2 organize for action and rebuild and reclaim the beauty we
3 inherited."

4 As President of the Metropolitan Sanitary
5 District, I will do everything within my power and use every
6 means to make sure that we keep our Lake water free of
7 pollution.

8 Ladies and gentlemen, let us put aside petty
9 differences and personal gain, and rebuild and reclaim our
10 waters for a more beautiful and more healthful tomorrow!

11 CHAIRMAN STEIN: Thank you, Colonel Chesrow, for a
12 very excellent statement.

13 Anything that I would say would be an
14 anticlamatic remark.

15 Are there any comments or questions?

16 MR. KLASSEN. Not on this, Mr. Chairman, but before
17 we close, I want to ask one question.

18 CHAIRMAN STEIN: Does that complete the Sanitary District's
19 presentation?

20 MR. CHESROW: Yes.

21 CHAIRMAN STEIN: Thank you very much, Colonel.

22 This was a certainly significant contribution
23 to the conference and I certainly appreciate it.

24 Mr. Klassen?

25 MR. KLASSEN: This merely, Mr. Chairman, in order that

1 the conference record will show that some thought has been
2 given to this, we have talked, pointed our fingers at
3 industries and cities and about everything else, but we do
4 know with the increase in shipping, that the problem of
5 sanitary wastes and wastes from shipping such as oil, bilge,
6 what-not, is and will continue to be a problem and I think
7 that some place in the conference record, cognizance should
8 be taken of this problem.

9 I think this is probably within the purview of
10 the Department of Health, Education, and Welfare to come up
11 with some active program in this area.

12 I want to interject this so it would not be
13 overlooked.

14 CHAIRMAN STEIN: Well, I wish I could be as sure as you
15 are.

16 I think Mr. Poole heard me make a speech on
17 this several months ago. I wasn't so certain, was I?

18 MR. POOLE: No.

19 CHAIRMAN STEIN: We have the right to do it.

20 With that, I am sure the conferees will
21 consider that along with the other problems discussed in
22 the session that we are going to have.

23 Now, we can expedite matters by trying to be
24 back here in an hour. May I ask that the conferees stay in
25 the room. You may be assured we are getting close to the
time to adjourn. But the people in the room should be

1 leaving as soon as possible, because the sooner you get out --
2 and this isn't meant as an invitation to push you - the
3 sooner we can get started working. We will reconvene at
4 12:35 with an announcement we hope.

5 Thank you.

6 (Whereupon the proceedings in the above
7 entitled matter were continued until 12:35 p.m.)

8 CHAIRMAN STEIN: May we reconvene.

9 I do think this conference has been one of the
10 most successful and this may be in spite of or because we
11 have been dealing with one of the most complicated problems
12 we have run into. I think and I can look at the table here,
13 most of the conferees have had at least 20 years experience
14 each in this field

15 I don't want to identify any of them, but some
16 of them have had considerably more and I think we, for years,
17 have all known that this problem in the southern end of Lake
18 Michigan that we have attempted to solve and get out of the
19 way today was going to be one of our most challenging.

20 I think that we have to give full consideration
21 and credit to the State agencies and the Sanitary District
22 for their full cooperation and for the others participating
23 in the conference--municipalities, industries, waterworks
24 operators and so forth.

25 I would particularly like to single out

1 Hy Gerstein's presentation because we here had an agency that
2 was not a regulatory agency, charged by law to come up with
3 a report giving us one of the most comprehensive, informative
4 and deeply analytical reports that I have seen presented in
5 the field of water pollution control, by any agency or any
6 scientist, or whatever they may be and this has been most
7 helpful.

8 I do think that the transcript of this
9 conference, when it becomes available, will no doubt be a
10 very, very bulky document. But I do think it will be a
11 repository for some excellent information. As a matter of
12 fact, this may rank as one of the best of the municipal,
13 industrial symposia on record and I do think that we have
14 made an enviable record of putting together information and
15 various views here.

16 I also must say and I would like to compliment
17 the participants and the conferees for handling their time
18 and that of their invitees and participants in the way
19 they have.

20 I think the percentage of the pertinent and
21 germane material presented at this conference is probably
22 the highest that I have ever seen and this, indeed, is a
23 compliment.

24 While the conference went a little wild and
25 was a little long, I think, by and large, all of the material
was germane, pertinent and to the point.

1 Now, as you can appreciate, the conferees have
2 been discussing this matter from time to time as the state-
3 ments came in

4 There was a preliminary meeting on Saturday
5 of the conferees when some ideas were worked out.

6 It was recognized that most of the information
7 coming from the Chicago Water Works, from the Federal
8 Government and from Indiana was in them, and the picture
9 was beginning to emerge. It was obvious that we would have
10 to wait, certainly to hear from the Sanitary District and
11 representing itself and the industry within its jurisdiction
12 before complete and definitive conclusions and recommendations
13 could be made by the conferees.

14 By this process, the conferees were able to
15 preliminarily assess their thoughts of a day or two where
16 these could mature and they could reflect on them and suggest
17 revisions. We do have the benefit of the excellent presenta-
18 tion of the Sanitary District of Mr. Chesrow and his staff
19 and Vinton Bacon and arrived at conclusions and recommendation

20 I am pleased to report that the conclusions
21 and recommendations of the conferees are unanimous and this
22 was arrived at by a discussion and consensus. No vote was
23 ever needed.

24 I think the presentations were so excellent, the
25 type of men we have as conferees and the professional dis-

1 cipline that they have prevailed, so the conclusions and
2 recommendations almost wrote themselves.

3 The unanimous conclusions and recommendations
4 of the conferees are as follows:

5 1. Interstate pollution endangering the
6 health and welfare of persons in a state other than that
7 where the discharges originate exists in the waters of the
8 Grand Calumet River, Little Calumet River, Lake Michigan
9 and their tributaries.

10 Such pollution is subject to abatement under
11 the Federal Water Pollution Control Act.

12 2. Sewage and industrial waste from sources
13 in Indiana, the Little Calumet River area and Grand Calumet
14 area and Indiana Harbor area, contribute to such interstate
15 pollution in Illinois.

16 3. There is no evidence of such interstate
17 pollution from discharges in the Burns Ditch area in Indiana.

18 4. Municipal and industrial waste from
19 sources in the Calumet area in Illinois contributes to such
20 interstate pollution in Indiana.

21 5. Cognizance is taken of the efforts in both
22 states to abate such interstate pollution, but action taken
23 to date is not adequate and such interstate pollution still
24 exists.

25 6. The nature of the delays in abating such

1 interstate pollution include the complexity of the problem
2 and the concentration of population and industry.

3 7. To initiate a program of immediate remedial
4 action to protect water quality in the area for the maximum
5 number of legitimate uses, the conferees will use as a guide
6 for water quality at the Chicago Water Works intakes the
7 "Recommended Quality Criteria: Goals Lake Water at Chicago
8 Intakes," which was presented as an attachment to the findings
9 and conclusions and recommendations presented by the Depart-
10 ment of Water and Sewers of the City of Chicago at this
11 conference.

12 The conferees will use as a guide for bacterial
13 water quality at bathing beaches covered by this conference
14 the requirement that receiving water shall be considered
15 unsuitable for bathing if the coliform concentration exceeds
16 1000 per 100 milliliters.

17 8. The conferees will establish a technical
18 committee as soon as possible which will evaluate water
19 quality criteria and related matters in the area covered by
20 the conference and make recommendations to the conferees
21 within six months after the issuance of the summary of the
22 conference.

23 9. The Indiana Stream Pollution Control
24 Board, the Illinois Sanitary Water Board and the Metropolitan
25 Sanitary District of Greater Chicago will institute immediate

1 action in their respective jurisdictions that all sewage re-
2 ceive at least secondary treatment plus adequate effluent
3 disinfection within one year after the issuance of the summary
4 of the conference.

5 10. The Indiana Stream Pollution Control Board,
6 the Illinois Sanitary Water Board and the Metropolitan
7 Sanitary District of Greater Chicago will institute immediate
8 action in their respective jurisdictions to insure that
9 industries will institute housekeeping practices which will
10 minimize the discharge of wastes from industrial sources and
11 to insure optimum operation of sewerage systems and sewage
12 treatment facilities to minimize by-passing of sewage treat-
13 ment plants or other practices that result in the discharge of
14 untreated or partially treated wastes and report on these
15 activities to the conferees within six months after the issu-
16 ance of the summary of this conference.

17 11. The Indiana Stream Pollution Control Board,
18 the Illinois Sanitary Water Board, the Metropolitan Sanitary
19 District of Greater Chicago will undertake action to insure
20 that industrial plants discharging wastes into waters within
21 their respective jurisdictions institute programs of sampling
22 their effluents to provide information about waste outputs
23 needed by these agencies in the carrying out of their
24 functions.

25 Such information will be maintained in open

1 files by these agencies for those having a legitimate interest
2 in the information and the agencies will report to the
3 conferees on this activity within six months after the
4 issuance of the summary of this conference.

5 12. The Indiana Stream Pollution Control
6 Board, the Illinois Sanitary Water Board, and the Metropolitan
7 Sanitary District of Greater Chicago, maintaining close
8 liaison with the technical committee created by the conferees
9 will develop a time schedule for the construction of
10 necessary industrial waste treatment facilities.

11 Such a schedule will be submitted to the
12 conferees for their consideration within six months after
13 the issuance of the summary of this conference.

14 13. The Thomas J. O'Brien Lock be placed in
15 operation to protect water quality of Lake Michigan and
16 prevent backflow to the Lake. This should be done as soon
17 as possible, but not later than January 1, 1966.

18 14. Surveillance will be the primary
19 responsibility of the Indiana Stream Pollution Control
20 Board, the Illinois Sanitary Water Board, and the Metropolitan
21 Sanitary District of Greater Chicago.

22 The Department of Health, Education, and
23 Welfare will make available a resident technical group and
24 visiting groups of experts which will assist the state
25 agencies and the Metropolitan Sanitary District of Greater

Chicago at such time as requested by them.

15. The conference may be reconvened on the call of the Chairman. It is anticipated that the conference will be reconvened in six months.

RECOMMENDED QUALITY CRITERIA GOALS

LAKE WATER AT CHICAGO INTAKES

<u>Parameter</u>	<u>Acceptable Limits Annual Average</u>	<u>Permissible Limits Not More Than 12 Days Per Year</u>
Coliform per 100 ml.	Less than 200	2500
Dissolved Oxygen ppm	NOT less than 8	Not less than 5
Biological Oxygen Demand ppm	Less than 1.5	Maximum 3
pH	Average 8.2	Maximum 9 Minimum 7.5
Chlorides ppm	(8. (Subject to readjust- (ment	)Maximum 15)
Color	Less than 5	Maximum 15
Total Iron (Fe) ppm	Less than 0.10	Maximum 0.2
Phenols ppm	Less than 0.001	Maximum .001
ABS ppm	Less than 0.05	Maximum 0.15
Total Dissolved Solids ppm	165	185
Ammonia Nitrogen ppm	Less than 0.02	0.05
Sulfate ppm	30	50

NOTE: Miscellaneous trace contaminants to meet limits set by USPHS Drinking Water Standards.

1 We have purposely omitted the parameter "odor
2 threshold" number because of differences which exist in the
3 effectiveness of water treatments for removing various types
4 of odors from the water. It has been our experience that it
5 is more difficult to reduce a "hydrocarbon" type odor of 6
6 threshold intensity to an acceptable level, than an algae-
7 type odor of 15 threshold intensity.

8 We are therefore, suggesting that natural
9 algae odors be omitted from these parameters, and set a
10 maximum goal of a threshold odor number of 6 in the intake
11 water for odors produced by industrial waste pollution with
12 the particular caution to be observed that the odors so
13 caused should always be of such nature as to come within the
14 capacity of a conventional water treatment plant for their
15 removal.

16 * * *

17 CHAIRMAN STEIN: This concludes the recommendations and
18 conclusions of the conferees.

19 Do the conferees have anything to say or add
20 at this point?

21 The summary will be issued in accordance with
22 the law by the Secretary of Health, Education, and Welfare.

23 I would like to thank you all for participa-
24 ting, coming. I would like to thank the conferees.

25 To my mind we have taken a great step toward

1 cleaning up pollution of our end of Lake Michigan and the
2 tributaries thereto.

3 I think for all concerned, states, Sanitary
4 District and the Federal Government, this indeed is a mile-
5 stone in our respective pollution control programs.

6 Thank you all for coming and the first
7 session of the conference stands adjourned.

8 (Whereupon the Conference was adjourned.)
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Lower End Lake Michigan Conference, Chicago, Illinois, March 2 - 9, 1965

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